TOLEDO®

MODEL

8582

COUNTING SCALE TECHNICAL MANUAL

TM 008582 I00

INTRODUCTION

This publication is provided solely as a guide for individuals who have received Toledo Technical Training in Servicing the described Toledo Product.

Information regarding Toledo Technical Training may be obtained by writing:

Toledo Scale
Industrial Training
P.O. Box 1705
Columbus, Ohio 43216

WARNING: Before gaining access to any integral parts of the scale, always remove power from the unit by unplugging the AC line cord. Before performing any service on this equipment, this manual must be reviewed and understood.

TOLEDO SCALE RESERVES THE RIGHT TO MAKE REFINEMENTS OR CHANGES WITHOUT NOTICE.

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

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I. GENERAL DESCRIPTION

The Toledo Model 8582 combines heavy duty construction with high resolution performance for applications that require a broad range of parts counting capability. The 8582 is compatible with one or two remote scales allowing the unit to be configured in a system offering optimum flexibility and consistently accurate piece counts.

The Model 8582 is simple to operate, yet offers unmatched functional versatility. Customized transaction prompts and sequences can be configured in setup, all but eliminating operator uncertainty. For applications that require total operating flexibility, an independent mode can be enabled in setup allowing data to be input in virtually any sequence. Precise average piece weight and count calculations are derived from a Toledo digital load cell coupled with microprocessor based electronics providing one part in 500,000 resolution of scale capacity.

The standard scale memory feature can be configured into 200 individual inventory files for storage of part numbers, descriptions, totals, etc.; or as a buffer intended to capture and store transaction data for upload to a host or other peripheral at the end of a shift or production cycle. All setup parameters and data are battery backed and are retained if power is ever lost.

The unit is available in a standard desk mount configuration or in a NEMA 12 wall mount enclosure for dusty environments. Accessories include a full travel terminal style keyboard or sealed membrane version for extended data input capability (desk version only); a bar code option for applications that require scanning input; an additional RS232 or RS485 serial communication port; and expanded memory for inventory files or transaction buffer. All options are modular and can be installed during initial installation or added at a later date.

A. FEATURES

- Remote Scale Input: Allows one or two additional scale bases to be used with the self contained unit for applications requiring a multiple platform system.
- Keyboard Setup and Calibration: All setup parameters and scale operating features including calibration can be easily configured through the standard keyboard.
- Customized Operating Prompts: System versatility and user friendliness are insured with selectable operating modes. If desired, the highly visible dot matrix display can be used to provide customized operating prompts that are defined by the user and permanently stored in setup.
- Transaction Identification: Up to four lines of identification data totalling 32 characters may be input and/or stored per transaction.
- Standard Scale Memory: Can be user formatted into an inventory file for storage of part ID's, weights, totals etc., or as a buffer for storage of completed transactions.
- Standard Data Communication: Includes an RS232 or 20mA output for Toledo printers and an RS232 or RS485 bi-directional port for host interface. Ideal for system integration, the 8582 features networking protocol allowing up to 28 individual scales to be linked to a single host port in a multidrop configuration.
- Accessories: Standard hardware is compatible with a wide range of accessories including alphanumeric keyboard, additional Serial I/O, bar code scanner or printer, memory expansion PCB and remote display.

B. STATEMENT OF PERFORMANCE

The performance of any count-by weighing scale is dependent on uniformity of weight per piece, number of pieces in the sample, individual piece weight and the percent of rated load placed on the scale. In application, count accuracy is also dependent upon the ability of the operator to read and record the count information accurately.

This high resolution parts counter significantly reduces errors induced by the operator. In most applications, it provides better practical accuracy than either hand counting or using mechanical techniques. Assuming proper capacity selection, count accuracy of +/-one part is attainable in many specific cases. However, the most significant variable is uniform weight of the parts to be counted. This variable is not controllable by the scale system.

C. ACCURACY CONSIDERATIONS

Counting accuracy is determined primarily by these factors:

1. Digital resolution of the sample weight.
2. Piece to piece weight variation.

Item 1 is the most frequent cause of parts counting inaccuracy because of the user's desire to count and handle the minimum number of sample pieces. For example, with a sample weight of 0.02% of full scale, sample weight resolution is +/- one part in

100, so counting error attributable to the sample is +/- 1.0% at best. Use of the 0.1% or 0.05% minimum sample weight will significantly reduce sampling error and ultimately improve counting accuracy.

Item 2 is not under control of the parts counter, but is a factor which merits serious attention by the user. The overall count accuracy can be no better than the piece to piece variation, and may be much lower if the sample is not representative of the average piece weight.

II. SYSTEM DESCRIPTION

The 8582 Logic PCB provides a DC supply voltage to the digital load cell which responds with numeric values proportional to the weight applied to the platter. This weight information is then used to determine the average piece weight and corresponding piece count.

Operational parameters and calibration are accessible via the front keyboard so no internal access is required. Calibration values are stored in non-volatile ROM (Read Only Memory) so they will not be lost during a power outage. Operational parameters are stored in battery backed RAM (Random Access Memory).

A. INTERNAL FUNCTIONS

The basic 8582 consists of three major blocks. These are:

1. Digital Load Cell – Communicates bidirectionally with the Logic PCB to determine weight applied to the platter.

2. Logic PCB – Contains the power supply and logic circuitry required to operate the scale. This PCB scans the keyboard, communicates bidirectionally with the digital load cell, drives the Display PCB, has two serial ports (printer and I/O1), and also contains a bus connection to communicate with optional accessories. A host communications port is also available from this PCB.

3. Display PCB – This contains the 19 character dot matrix vacuum fluorescent display that is 0.44 inches high. The drivers for the display are located on the Logic PCB. There is a ribbon harness to connect the Display PCB to the Logic PCB.

B. DISPLAY

The 8582 utilizes a 19 character vacuum fluorescent display that is divided into three separate sections. They are – Weight (5 digits), Data (12 digits) and Scale Selection (2 digits). Cursors under the display digits indicate exactly what data is being displayed.

C. KEYBOARD

1. Desk Version

   The desk unit contains a 4 x 5 matrix keyboard for operator interface. The keyboard is domed with tactile feel and has an embossed polycarbonate overlay with ridges to separate active key areas. The functions available are tare entry, sample or APW entry, ID entry (numeric only) clearing of data, printing, zeroing the scale, setup selection, scale selection, recall and memory access.

   An optional qwerty keyboard or a membrane keyboard is available for alpha entry of ID.

2. Wall Version

   The wall version has a 4 x 5 matrix keyboard containing all the operations of the desk keyboard except the wall keyboard is not tactile feel – it is a flat keyboard. In addition to the 4 x 5 keyboard, the wall unit has a 3 x 10 keypad that adds alpha characters, a question mark, a slash, a hyphen and a space character.

   No optional keyboards are compatible with the 8582 wall unit.

D. OPTIONS

1. Remote Scale Input

   The basic 8582 scale is compatible with a broad offering of remote bases for counting applications that require both maximum sensitivity for piece weight sampling and extended weighing capacity for gross loads. The desk unit can accommodate one or two remote inputs. Where added system flexibility is required, a total of two bases may be used with the NEMA 12 Wall unit in virtually any combination of capacities.

   The analog remote scale PCB can power as many as four 350 ohm load cells. Both 2mV/V and 3mV/V load cells are compatible with the 8582.

2. Bar Code Scanning

   The Model 8582 can be easily adapted to bar code-based inventory systems. Scanning of bar code data can be accomplished with an optional digital wand accessory. The scanning

option allows the Model 8582 to process code 39, Interleaved 2 of 5, or Codabar formats. When coupled with Toledo's Model 8860 thermal printer, up to three lines of bar code data may be recorded on an adhesive label along with an extensive range of human readable information in a variety of selectable formats.

3. Alphanumeric Keyboard Data Entry

   An optional full travel qwerty keyboard (typewriter type) or sealed membrane style (alphabetical) are available to expand the functional capability of the desk type 8582. They are intended for applications that require alphanumeric data to be input to the scale locally (for example transaction identification or description). The modular keyboards may be interfaced to the scale at the time of initial installation or added at a later date.

4. Serial I/O 2

   An optional serial port is available to operate a Toledo Model 8622 remote display or host communications (non-multidrop) if I/O 1 is previously utilized. The remote display will show count (in the count mode) or blank when not in the count mode, in areas located remote from the 8582.

5. Memory Expansion

   The Model 8582 features 12 KB of standard scale memory that can be configured by the user as an inventory file or as a transaction buffer for applications that require scale data to be transmitted to a host device.

   If configured as file memory, up to 200 part IDs can be stored for inventory control or data recall. A 128 KB memory expansion option is available to increase the number of files to 2400 or for additional buffering capability depending on configuration. This option also contains the serial port I/O 2.

6. Network Communication

   The Model 8582 offers standard bidirectional RS232 or RS485 communication. An optional interface harness provides required hardware for a local area network application. Based on a polling scheme, the 8582 networking feature utilizes RS485 multidrop communication. The T-LAN (Toledo Local Area Network) feature is intended for use with an IBM compatible Host; up to 28 scales can be linked in the network. A multidrop communication card with onboard program is available for installation in one of the PC's expansion slots.

Data communication occurs at 375 Kilobaud at distances up to 300 meters.

III. SPECIFICATIONS

A. ELECTRICAL

1. Power Requirements

   The 8582 operates at 120, 220 or 240 VAC (+10%, -15%) 50 or 60 Hz (+/-1.5 Hz) selectable by moving a wire terminal. Power consumption is approximately 35 watts.

   The line voltage must be within these specifications. The power line for the 8582 should not be shared with equipment that generates line noise (such as motors, relays, heaters, etc.). If adverse power conditions exist, a power line conditioner may be required.

2. U.L. & C.S.A. Standards

   Materials, components and electrical design comply with U.L. specification 114, Office Appliances and Equipment and 746 Polymeric Materials and also conforms to C.S.A. standard C22.2 Number 143-1975 Office Machines. This includes grounding of all metal parts, fusing, etc..

3. FCC Regulations

   The 8582 meets or exceeds FCC docket 80-284 for conducted and radiated emissions requirements.

4. Radio Frequency Interference

   This unit is not intended for use in environments where a high concentration of RFI is present.

B. ENVIRONMENTAL

1. Temperature Sensitivity

   1.1 Digital Load Cells

   The 8582 internal scale (desk version) has a zero temperature coefficient of 60 PPM/°C maximum and a span temperature coefficient of 30 PPM/°C maximum.

   1.2 Analog Scale PCB

   The optional analog Scale PCB (standard on the wall version) has a zero temperature coefficient of 0.25 uV/°C and a span temperature coefficient of 12 PPM/°C.

2. Operating Temperature

   The Model 8582 is operable from 32°F (0°C) to 104°F (40°C) at 0 to 95% relative humidity,

non-condensing. Wet bulb temperature not to exceed 86°F (30°C) during scale operation.

3. Application

   3.1 The 8582 desk version is intended for use in a general purpose atmosphere. It is intended for indoor applications where dirt, oil or water is not present.

   3.2 The 8582 wall mount enclosure meets NEMA 12 design test requirements and is intended for indoor use primarily to provide a degree of protection against dust, falling dirt, and dripping non-corrosive liquids.

   3.3 The 8582 is not designed for "hose-down" applications. Typical examples of misapplication of the scale include, but are not limited to:

   a. Immersions
   b. Hosedown
   c. Corrosive chemical environments

   Toledo Scale manufactures other scales that are suitable for these applications.

4. Hazardous Areas

   In locations classified as hazardous by the National Electrical Code (NEC) because of combustible or explosive atmospheres, special precautions are required. DO NOT USE THE 8582 IN THESE LOCATIONS.

C. PHYSICAL

1. Appearance and Dimensions

   The Model 8582 desk version is fog white with a black platter assembly and multi-color keyboard. The unit is 5.4" (134mm) high, 14.7" (374mm) wide and 14.6" (370mm) deep. This version of the 8582 weighs approximately 20 pounds (9.1 kg).

   The Model 8582 wall enclosure is brushed stainless steel with a multi-color keyboard. The enclosure is approximately 12.3" (312mm) high, 12.3"(312mm) wide and 6.3"(160mm) deep. This version of the 8582 also weighs approximately 20 pounds (9.1 kg)

2. Construction

   The base and sub-platter of the desk version are made from die cast aluminum. The unit utilizes a moment insensitive load cell. The cover, bezel, and platter are made of heavy structural plastic. A level bubble is mounted in the subplatter, requiring only removal of the platter for viewing.

   The wall mount version of the 8582 is made from type 304L stainless steel that is solution annealed.

3. Platform Size (desk version)

   The 25, 50 and 100 pound capacity scales use a platter that is 14.5" wide (371mm) and 10.8" deep (273mm). The 5 and 10 pound units include 8" X 8" platform.

4. Shipping Information

   Approximate shipping weight is 22 lb (10 kg). Carton dimensions are 9" (229mm) X 19" (483mm) X 19" (483mm) for the desk unit and 11" (279mm) X 16" (406mm) X 16" (406mm) for the wall unit.

D. DATA INTERFACE

The standard 8582 contains a printer port to provide 20mA current loop or RS-232-C communications. The baud rate is selectable from 300 to 9600 baud and parity is selectable as even, odd, no parity, or always a "0". All data will be in 11 bit frame – 1 start bit, 7 ASCII coded data bits, 1 parity bit and two stop bits.

When the PRINT key is pressed on the keyboard, the 8582 will output a message as formatted by setup selections. Transmission of a checksum character is selectable as is expanded print format. Scale motion, expanded display mode, under zero or over capacity operation will disable a print command.

Also standard on the 8582 is a serial port labeled I/O1.

1. This port can be programmed as an input for either of the keyboard options (desk version only) or it can be used for a remote display or for host communications (non multidrop). The configuration for this port is done in the normal setup programming.

E. CONFIGURATION GUIDE

Factory Number	Avoirdupois Indication	Metric Indication	Load Cell Capacity
8582-0002	5 X 0.0005 lb	2 X 0.0002 kg	3.75 kg
8582-0003	10 X 0.001 lb	5 X 0.0005 kg	7.5 kg
8582-0004	25 X 0.002 lb	10 X 0.001 kg	15 kg
8582-0005	50 X 0.005 lb	20 X 0.002 kg	30 kg
8582-0006	100 X 0.01 lb	50 X 0.005 kg	60 kg
8582-0010	Wall Enclosure	--	--

IV. INSTALLATION INSTRUCTIONS

To unpack and setup the 8582, use the following procedure.

A. SETUP PROCEDURE (Desk Units)

1. Examine the shipping box for any signs of damage. IF DAMAGE IS FOUND, MAKE A CLAIM WITH THE CARRIER IMMEDIATELY.

2. Open the box, remove the scale and place the scale on a flat level surface.

CAUTION: **Do Not lift the scale by the platter or sub-platter. Grasp the scale by the base to lift. Do not stress or bump the sides of the platter as this will cause a side torque to the platter thus damaging the load cell.**

3. On 5 pound capacity scales (8582-0002), steps 3.1 through 3.4 must be followed. On all other desk 8582's, these steps are not required – proceed to step 4.

   3.1 Remove the rubber band securing the 8" square plastic platter to the sub-platter.

   3.2 Grasp the plastic platter by the edges and lift straight up to remove it. The platter is held by loop fasteners in the corners.

   3.3 Remove the two 8-32 screws and rubber O-rings from the top of the sub-platter. These parts, along with the shims, must be saved as they are required any time the scale is transported. See Figure 1.

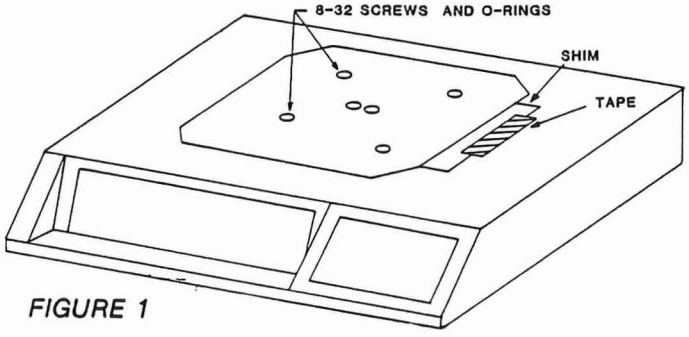


FIGURE 1

   3.4 Remove the tape and shim from the top of the right side of the dead-deck. See Figure 1. Skip the following step 4.

4. Remove the platter by lifting upward and locate the level bubble.

5. Level the scale by turning the adjustable feet on the bottom of the scale base in or out. The feet should be adjusted so the scale does not rock. The correct position of the level bubble when the 8582 is level is shown in Figure 2.

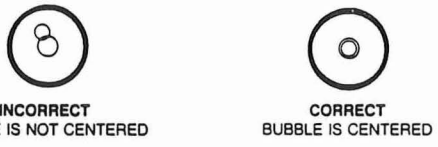


FIGURE 2

6. Install any optional kits at this time.

B. SETUP PROCEDURE (Wall Units)

1. Examine the shipping box for any signs of damage. IF DAMAGE IS FOUND, MAKE A CLAIM WITH THE CARRIER IMMEDIATELY.

2. Open the box, remove the 8582 and continue to inspect for damage.

3. If a printer is to be connected to the 8582 wall mount enclosure, the printer output harness must be installed. The wall enclosure is <u>not</u> NEMA 12 rated if a printer harness is installed. Follow these steps:

   3.1 Remove and discard the cover plate from the bottom of the 8582 labeled "Printer".

   3.2 Attach the 25 pin connector end of the printer harness (number 129319 00A) to the connector plate on the bottom of the 8582 where the cover plate was removed in the step 3.1. Use the standoff kit included to secure the harness noting that the connector mounts from the inside of the enclosure.

   3.3 Plug the remaining end of the printer harness into J4 on the Logic PCB.

   3.4 Route the new harness so it does not interfere with the closing of the enclosure door.

4. If I/O port 1 is to be utilized on the 8582 wall mount enclosure, the I/O 1 output harness must be installed. The wall enclosure is <u>not</u> NEMA 12 if I/O port 1 harness is installed. Follow these steps:

   4.1 Remove and discard the cover plate from the bottom of the 8582 labeled "I/O 1".

   4.2 Attach the 9 pin connector end of the I/O 1 harness (number 129320 00A) to the connector plate on the bottom of the 8582 where the cover plate was removed in the step 4.1. Use the standoff kit included to secure the harness noting that the connector mounts from the inside of the enclosure.

   4.3 Plug the remaining end of the I/O 1 harness into J5 on the Logic PCB.

   4.4 Route the new harness so it does not interfere with the closing of the enclosure door.

5. Attach the four "L" brackets (number 129773 00A) included with the 8582 to the exterior of the enclosure at the left and right sides. Do this by removing the existing bolts and lockwashers and placing the brackets in proper position before re-installing the lockwashers and bolts. Tighten the bolts to secure the brackets.

6. Install the 8582 in the location it will be used. The hole pattern for mounting the enclosure is shown in Figure 3.

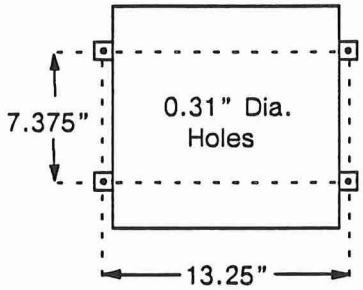


FIGURE 3

7. Attach the scale base that is to be used with the 8582 to the Scale 2 connection on the bottom plate of the 8582. The wiring for this connection is described in Section VI, Part A.

8. Level the scale base and verify its operation referencing the technical manual for that particular understructure.

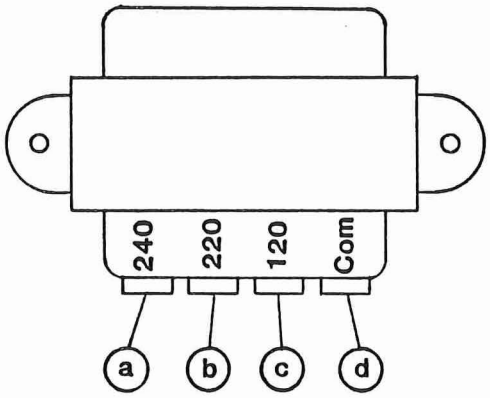
9. Install any optional kits at this time. Refer to the instructions packed with each kit for installation details.

C. ALTERNATE VOLTAGE SELECTION

If the 8582 is to be connected to a 220 or 240 volt AC power source, it will be necessary to change the connection to the transformer assembly and replace the fuse. Follow these steps:

1. Open the 8582 to gain access to the transformer assembly.

2. Remove the wire connection from position "c" shown in the next drawing of the transformer and attach to either position "a" or "b" corresponding to the voltage the 8582 will be utilizing.



a. 240 volt AC operation
b. 220 volt AC operation
c. 120 volt AC operation
d. Common (Do not change)

3. Install the fuse with the correct rating from the following chart.

OPERATION	RATING	PART NUMBER
120 V	1/2 A Slo-Blo	112145 00A
220 V	1/4 A Slo-Blo	095920 00A
240 V	1/4 A Slo-Blo	095920 00A

4. Close the enclosure and test the operation of the 8582 per this technical manual.

D. PROGRAMMING PROCEDURE

This section of the technical manual describes the programming of the operating modes and features of the 8582, as well as the calibration.

Sample displays are given to show the programming prompts. Described under each sample display are the possible selections and the effect these selections will have on the unit's operation.

The following front panel pushbuttons perform the specified functions when in the programming mode.

ENTER – Pressing this pushbutton will accept the displayed programming parameter and proceed to the next prompt.

YES (1) – Depressing this pushbutton will enable the displayed parameter and proceed to the next prompt unless otherwise stated.

NO (0) – Pressing this key will disable the displayed parameter and proceed to the next prompt unless otherwise stated.

ZERO – Depressing this pushbutton will enable the programmer to back-up to the previous prompt.

CLEAR – Pressing this pushbutton will cause the unit to bypass any other programming parameters and advance to the end of the programming routine.

The following chart can be used as a quick reference for programming descriptions. Also listed is the recommended selection for each step as a beginning point for initial setup. Verify each selection, such as calibration in pounds, to be certain it coincides with actual usage before attempting calibration.

STEP	DESCRIPTION	INITIAL SETUP
F1	**CONFIGURE OPERATIONAL FUNCTIONS**	
F1.1	Enable Operator Setup	N
F1.2	Include Sample	Y
F1.3	Repeat ID	N
F1.4	Tare Autoclear	Y
F1.5	APW Autoclear	Y
F1.6	Variable Sample Enable	Y
F1.7	Fixed Sample Quantity	010
F1.8	Enable Sample Enhancement	Y
F1.9	Percent Accuracy Recall Enable	Y
F1.10	Select Weight Units	lb
F2	**CONFIGURE UNIT FUNCTIONS**	
F2.1	Sample in Pcs./Wt.	N
F2.2	Minimum Sample Select	0.02
F2.3	Auto Sample Acceptance	Y
F2.4	Tare Active	Y
F2.5	Keyboard Tare Active	Y
F2.6	Beeper Active	Y
F3	**ENTER TIME AND DATE**	
F3.1	Clock On	Y
F3.2	24 Hour Clock	*
F3.3	Enter Hour	*
F3.4	Enter Minute	*
F3.5	AM or PM	*
F3.6	Date On	Y
F3.7	Enter Year	*
F3.8	Enter Month	*
F3.9	Enter Day	*

* – Program as required.

F4	**CONFIGURE PROMPTS**	
F4.1	ID Active	Y
	Clear File ?	Y
	Sure ?	Y
F4.2	ID Format Selection	1
F4.3	Enter ID Prompt 1	*
F4.4	Operation Mode	2
F4.5	Order of Prompts	2
F4.6	ID Mandatory	N
F4.7	Accumulation Mandatory	N
F4.8	Accumulate On Print	N

* – Program as required.

F5	**ENTER FILE SECTION**	
F5.1	Use Inventory File	Y
	Clear File ?	Y
	Sure ?	Y
F5.2	Modify File	Y
F5.3	Enter Part Number	*
F5.4	Delete ?	*
F5.5	Sure ?	*
F5.6	Enter Description	*
F5.7	Enter APW Value	*
F5.8	Enter Tare Value	*
F5.9	Continue File Entry	*
F5.10	Use File APW	N
F5.11	Enable APW Tolerance Check	N
F5.12	Select APW Tolerance Value	1.0%
F5.13	Transaction Buffer Active	N

* – Program as required.

F6	**CONFIGURE SCALES**	
F6.1	Test Mode Enable	N
F6.2	Configure Scale 1	Y
F6.2	Select Scale 1 Capacity Actual Calibration	*
F6.2	Enable AZM For Scale 1	Y
F6.3	Configure Scale 2	Y
F6.3	Select Scale 2 Capacity	*
F6.3	Select Scale 2 Increment Size Actual Calibration	*
F6.3	Enable AZM For Scale 2	Y
F6.4	Configure Scale 3	Y
F6.4	Select Scale 3 Capacity	*
F6.4	Select Scale 3 Increment Size Actual Calibration	*
F6.4	Enable AZM For Scale 3	Y

* – Program as required.

F7 CONFIGURE I/O PORTS

F7.1	Enable Multidrop Interface	N
F7.2	I/O Port 1 Function	OFF
F7.3	I/O Port 2 Function	OFF
F7.4	Bar Code Scanning Active	N

F8 CONFIGURE HOST COMMUNICATIONS

F8.1	Parity Select	EVN
F8.2	Checksum Enable	N
F8.3	Select Number of Stop Bits	2
F8.4	Baud Rate	9600
F8.5	Enter Scale ID Number	*
F8.6	Transmit ID 1	Y
F8.6	Transmit ID 2	Y
F8.6	Transmit ID 3	Y
F8.6	Transmit ID 4	Y
F8.6	Transmit Gross Weight	Y
F8.6	Transmit Tare Weight	Y
F8.6	Transmit Net Weight	Y
F8.6	Transmit APW	Y
F8.6	Transmit Sample Quantity	Y
F8.6	Transmit Percent Accuracy	Y
F8.6	Transmit Count	Y
F8.6	Transmit Time	Y
F8.6	Transmit Date	Y

* – Program as required.

F9 CONFIGURE PRINTER FUNCTIONS

F9.1	Printer Output Active	Y
F9.2	Parity Select	EVN
F9.3	Checksum Enable	N
F9.4	Baud Rate	300
F9.5	Print Format	1
F9.6	Displayed Weight Only	N
F9.7	Weight Format	2
F9.8	Print Format Inverted	N
F9.9	Print All Inventory File Records	N
F9.10	Print ID Expanded	N
F9.11	Print Net Expanded	N
F9.12	Print Count Expanded	N
F9.13	Enable Repeat Print	N
F9.14	Enable Autoprint	N

* – Program as required.

Nine programming steps of the 8582 can be accessed without turning the setup slide switch "ON" if step [F1.1] is programmed as YES. These nine steps are referenced as operator selectable setup parameters. To access these steps, press the decimal point key (.) immediately after turning the power switch at the right side of the unit "ON". After the 8582 has stepped through its power up sequence, it will show [F1.2] and the following steps will be accessed.

F1.2	Include Sample
F1.3	Repeat ID
F1.4	Tare Autoclear
F1.5	APW Autoclear
F1.6	Selectable Sample Enable
F1.7	Fixed Sample Quantity
F1.8	Enable Sample Enhancement
F1.9	Enable Percent Accuracy Display
F1.10	Select Weight Units

NOTE: After exiting the operator selectable steps the 8582 will perform an automatic zero capture.

Reference the actual programming descriptions in the next section for a full explanation of each of these steps. Note that these operator entered functions are not saved in non-volatile ROM. They will be over-written by the selections stored during normal setup in the event of a power failure.

To enter the setup mode on a desk type 8582, remove the platter (on scales with the 11" X 14" platform) or remove the plastic cover plug (on scales with the 8" square platter) and locate the setup switch access hole. See Figure 4. After locating the access hole, slide the setup switch (located in the access hole) toward the rear of the scale using a pointed non-conductive object. Do not use an object that could easily be dropped into the unit.

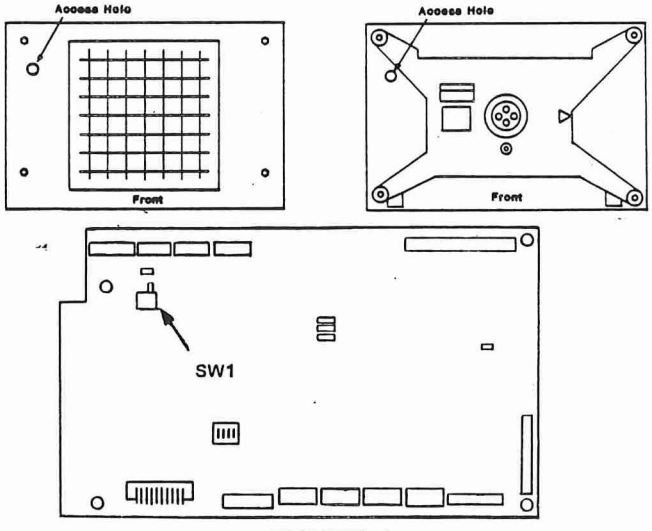


FIGURE 4

To enter the setup mode on a wall type 8582, open the front door and locate the setup switch SWI on the Logic PCB. See Figure 4. Slide the switch to the left using a pointed non-conductive object.

The display of the 8582 should now show [SETUP MODE]. At this time, the ENTER key on the keyboard of the 8582 must be pressed to enter the setup mode. Do not press the ENTER key on the Qwerty keyboard or the membrane keyboard if either of these options is present.

[F1]

CONFIGURE OPERATIONAL FUNCTIONS ?

YES – To enter into the setup of the operational parameters.

NO – To skip the operational parameter programming and proceed to [F2].

[F1.1 N]

ENABLE OPERATOR SETUP ?

YES – To enable operator selection of steps F1.2 through F1.10 without having to turn on the setup switch. This is done by pressing the decimal point key after turning the power switch on.

NO – To disable operator selection of steps F1.2 through F1.10. The setup switch must be turned on in order to change these parameters.

[F1.2 Y]

INCLUDE SAMPLE ?

YES – The sample weight and sample count will be added to the total weight and count.

NO – The sample weight and sample count will not be added to the total weight and count.

[F1.3 N]

ID REPEAT ?

YES – The ID will be repeated from one transaction to the next. The CLEAR key must be pressed to clear the ID.

NO – The ID will clear each time the scale returns to zero.

[F1.4 Y]

TARE AUTOCLEAR ?

YES – Tare will automatically clear when the scale returns to within one increment of zero after settling to a no motion condition 10 increments above net zero.

NO – Tare will be retained until the CLEAR pushbutton is depressed.

[F1.5 Y]

APW AUTOCLEAR ?

YES – Average piece weight will automatically clear when the scale returns to within one increment of zero after settling to a no motion condition 10 increments above net zero.

NO – Average piece weight will be retained until the CLEAR pushbutton is depressed.

[F1.6 Y]

SELECTABLE SAMPLE ENABLE ?

YES – To enable the selection of different sample counts (5, 10, 20, 50, or 100) before placing the sample pieces on the scale. Keyboard entry of sample counts is also allowed.

NO – To disable variable sample sizes and allow only the fixed sample size to be used. (See step [F1.7]).

[F1.7 010]

FIXED SAMPLE QUANTITY ?

Select the desired quantity to be used as the fixed sample size. The available quantities are 5, 10, 20, 50 or 100. Use the NO key to switch to the next value and the YES key to enter the correct value when displayed.

[F1.8 Y]

ENABLE SAMPLE ENHANCEMENT ?

YES – To activate the enhanced sample feature. Section V, Part F explains sample enhancement.

NO – The unit will operate in the normal count mode.

[F1.9 Y]

PERCENT ACCURACY RECALL ENABLE ?

YES – To enable the recall of % Accuracy after a count has been made.

NO – To disable the recall of % Accuracy.

[F1.10 lb]

SELECT WEIGHT UNITS ?

lb – The scale will weigh in the pounds mode and will not be switchable to kilograms.

kg – The scale will weigh in the kilogram mode and will not be switchable to pounds.

Use the NO key to switch to the other selection and the YES key to enter the correct units when displayed.

NOTE: Note that the above operator entered functions are not saved in non-volatile ROM if changed when the setup switch is not on. They will be overwritten by the selections stored during normal setup in the event of a power failure.

[F2]

CONFIGURE UNIT FUNCTIONS ?

YES – To enter into the unit function setup routine. The display will step to [F2.1].

NO – To bypass the unit function setup routine, the display will then step to [F3].

[F2.1 N]

SAMPLE IN PCS./WT. ?

YES – If the average piece weight is to be entered and calculated in pieces per weight unit (lb or kg).

NO – If the average piece weight is to be entered as a decimal value.

[F2.2 0.02]

MINIMUM SAMPLE SELECT ?

This allows selection of the percent of scale capacity that must be reached before an average piece weight may be calculated and a count sequence initiated. The available percentages are 0.0%, 0.02%, 0.05% and 0.10%.

Use the NO key to switch to the next value and the YES key to enter the correct value when displayed.

[F2.3 Y]

AUTO SAMPLE ACCEPTANCE ?

YES – When additional sample pieces required to reach the selected minimum sample requirement ([Add 5]) are to be automatically accepted after the pieces are added. The exact number must be added.

NO – When additional sample pieces required are to be entered via the ENTER key after adding the pieces.

[F2.4 Y]

TARE ACTIVE ?

YES – Tare will be enabled.

NO – To disable the tare function.

[F2.5 Y]

KEYBOARD TARE ACTIVE ?

YES – Numeric tares from the keyboard will be accepted as well as an autotare.

NO – Only an autotare will be accepted from the keyboard. Numeric entries will be ignored.

[F2.6 Y]

BEEPER ACTIVE ?

YES – The beeper will beep when a key is pressed on the keyboard of the 8582. Operation of a remote keyboard will not activate the beeper.

NO – The keyboard beeper will be inactive.

[F3]

ENTER TIME AND DATE ?

YES – To enter into the routine where the time and date are set.

NO – To skip the programming of time and date and proceed to step [F4].

[F3.1 Y]

CLOCK ON ?

YES – To enable the time feature for printing and to access the clock for setting the correct time.

NO – To disable the time function and proceed to [F3.6].

[F3.2 N]

24 HOUR CLOCK ?

YES – The clock will update in 24 hour format (military time).

NO – The clock will be in 12 hour format with AM or PM identifier.

[F3.3 04]

ENTER HOUR ?

Enter the correct hour using the numeric keys on the keyboard. If two digits are entered, the setup will automatically proceed to the next prompt. The value entered must be valid with respect to the selection for step [F3.2]. If the hour is already correct, press ENTER to continue.

[F3.4 45]

ENTER MINUTE ?

Enter two digits (00 through 59) for the correct minute using the numeric keys on the keyboard of the 8582. The display will automatically proceed to the next prompt. If the minute is correct, press ENTER to continue.

[F3.5 PM]

AM OR PM ?

YES – Press this key to enter the display (AM or PM) as the correct selection.

NO – This changes the display to the other selection, from AM to PM or from PM to AM.

[F3.6 Y]

DATE ON ?

YES – To enable the date feature for printing and to access the date for programming.

NO – To disable the date function and proceed to step [F4].

[F3.7 87]

ENTER YEAR ?

Enter the last two digits of the year (00 through 99) using the numeric keys on the keyboard and the display will automatically proceed to the next step. If the displayed year is correct, press ENTER.

[F3.8 12]

ENTER MONTH ?

Enter the month numerically referencing the following chart. After the two digits have been entered, the 8582 will advance to the next prompt.

MONTH	NUMERIC ENTRY	MONTH	NUMERIC ENTRY	MONTH	NUMERIC ENTRY
January	01	May	05	September	09
February	02	June	06	October	10
March	03	July	07	November	11
April	04	August	08	December	12

[F3.9 31]

ENTER DAY ?

Enter the day of the month (01 through 31) using the numeric keys on the keyboard. Invalid entries will not be accepted. After the two digits have been entered, the display will advance to [F4].

[F4 Y]

CONFIGURE PROMPTS ?

YES – To enter into the configuration section for the operator prompts.

NO – To skip the prompt configuration section and proceed to step [F5].

[F4.1 Y]

ID ACTIVE ?

YES – This enables the ID feature of the 8582. When this step is programmed as YES, either the inventory file or transaction buffer mode may be selected in section [F5].

NO – This disables the use of ID and also disables the use of the inventory file memory mode. The transaction buffer mode is still selectable. The setup advances to [F4.4]. Memory will be cleared when ID is disabled.

[F4.1 Y]

CLEAR FILE ?

This prompt will only occur when the memory of the 8582 must be cleared due to reprogramming of the use of ID. Since the inventory file cannot be active when ID is disabled, all existing files must be cleared. If the transaction buffer is active and ID is added or removed, all existing transactions must be cleared.

YES – This acknowledges that the decision to change the status of the ID feature was correct and it is okay to clear the file.

NO – This prevents accidental clearing of the file by incorrect setup selection. The

setup will show the previous prompt [ID ACTIVE] again.

[F4.1 Y]

SURE ?

This is the last safeguard to inhibit clearing of the memory by accident. It will only appear if the previous prompt [CLEAR FILE] was programmed as YES.

YES – The memory will be cleared and ID will be disabled.

NO – The [ID ACTIVE] prompt will be displayed again and memory will not be cleared.

[F4.2 1]

ID FORMAT ?

This step selects the quantity of ID fields (1 through 4) that will be used in the 8582. The possible selections are:

Selection	Description
1	One line of 32 characters.
2	Two lines-each 16 characters.
3	Three lines-one 16 character and two 8 character lines.
4	Four lines-one 16 character, one 8 character and two 4 character lines.

YES – This accepts the displayed value as the quantity of ID fields.

NO – This advances the display to the next possible selection each time it is pressed.

[F4.3]

ID PROMPT 1 ?

This display is shown for one second indicating the setup for ID 1 prompt. If a prompt has previously been entered, it is displayed, otherwise underscores are displayed under the characters to be entered. Enter up to 12 characters for the display prompt for ID 1. Press ENTER to enter this as the prompt. If format 1 was selected in step [F4.2], the setup will skip the programming for the other prompts and proceed to step [F4.4].

[F4.3]

ID PROMPT 2 ?

This display is shown for one second indicating the setup for ID 2 prompt. If a prompt has previously been entered, it is displayed, otherwise underscores are displayed under the characters to be entered. Enter up to 12 characters for the display prompt for ID 2. Press ENTER to enter this as the prompt. If format 2 was selected in step [F4.2], the setup will skip the programming for the other prompts and proceed to step [F4.4].

[F4.3]

ID PROMPT 3 ?

This display is shown for one second indicating the setup for ID 3 prompt. If a prompt has previously been entered, it is displayed, otherwise underscores are displayed under the characters to be entered. Enter up to 12 characters for the display prompt for ID 3. Press ENTER to enter this as the prompt. If format 3 was selected in step [F4.2], the setup will skip the programming for the last prompt and proceed to step [F4.4].

[F4.3]

ID PROMPT 4 ?

This display is shown for one second indicating the setup for ID 4 prompt. If a prompt has previously been entered, it is displayed, otherwise underscores are displayed under the characters to be entered. Enter up to 12 characters for the display prompt for ID 4. Press ENTER to enter this as the prompt.

[F4.4 2]

OPERATION MODE ?

This step selects the mode of operation for the 8582. Order independent mode requires the pressing of the correct key (ID TARE, SAMPLE or APW) before an entry on the keyboard in order to identify the entry. In order dependent mode operation, the operator simply follows the prompts on the 8582 display which will occur in the order selected in step [F4.5]. The two selections for the mode of operation are:

Selection	Description
1	Order independent mode
2	Order dependent mode

YES – Pressing this key accepts the displayed value as the selection for the mode of operation.

NO – Pressing this key toggles the display to the other selection.

NOTE: If order independent mode is selected, step [F4.5] will be skipped.

[F4.5 2]

ORDER OF PROMPTS ?

This step selects the order of prompting when the order dependent mode has been enabled in step [F4.4]. The possible selections are:

CHOICE	DESCRIPTION
1	"Tare?" followed by "APW?" or "PCS/Wt."
2	"Tare?" followed by "Sample ="
3	"APW?" or "PCS/Wt." followed by "Tare?"
4	"Sample =" followed by "Tare?"

NOTE: The ID prompt will always occur first.

YES – This selects the value on the display for the order of operation.

NO – This advances the display to the next selection each time the key is pressed.

[F4.6 N]

ID MANDATORY ?

YES – The cursor under the ID legend will flash indicating that a count cannot be obtained until an ID has been entered.

NO – ID entry may be bypassed by pressing the ENTER key.

[F4.7 N]

ACCUMULATION MANDATORY ?

YES – An accumulation must occur after a total piece count of 50 is reached on the gross scale before the operator can exit the counting mode. This is indicated by the flashing total cursor.

NO – Accumulation is optional and the counting mode may be exited at any time by a double CLEAR depression.

[F4.8 N]

ACCUMULATE ON PRINT ?

YES – A piece count accumulation will occur when the PRINT key is pressed when in the count mode.

NO – No accumulation will occur when PRINT is pressed. A manual accumulation must be made in order to accumulate a piece count.

[F5]

ENTER FILE SECTION ?

YES – To enter into the configuration section for the memory files.

NO – To bypass the file section and the setup will proceed to step [F6].

[F5.1 Y]

INVENTORY FILE ?

YES – The memory of the 8582 will be configured as an inventory file for storage of ID, tare, APW, count and count change all referenced by the ID.

NO – The inventory file will be disabled and accumulation of count by ID will not be possible.

[F5.1 Y]

CLEAR FILE ?

This prompt will occur when the memory configuration is changed from inventory file to transaction buffer or from transaction buffer to inventory file. In order to reformat the memory for the new use, all data must be cleared.

YES – This enables the clearing of all data in memory for reformatting.

NO – This stops the reformatting process and returns the display prompt to [F5.1 INV FILE?].

[F5.1 Y]

SURE ?

This is the last safeguard to prevent clearing of memory by accident. It will only appear if the previous prompt has been programmed as YES.

YES – Memory will be cleared.

NO – Disables clearing of memory and the prompt [F5.1 INV FILE?] will be displayed again.

[F5.2 Y]

MODIFY FILE ?

YES – This accesses the following four steps for entry of ID's, descriptions, APW's and tare values used in the inventory file.

NO – This skips the file entry steps and advances the setup to step [F5.10].

[F5.3]

PART NUMBER ?

This display will be shown for one second then the last 16 digit part number entered into memory will be displayed. The 8582 will show the first 12 characters for one second then the last four characters for one second then return to the first 12 characters and wait for an entry.

Enter a part number (ID) up to 16 characters in length. This part number will be the item that the inventory file references for storage. All data in the inventory file will be stored under this reference part number or ID. The display scrolls during entry. Press ENTER to continue.

[F5.4 N]

DELETE ?

If the ID entered in step [F5.3] is already in memory, this step asks if the file record is to be deleted. If no record was found, the setup will not display this prompt but will proceed to step [F5.6].

YES - Press this if the record stored under the part number entered in step [F5.3] is to be cleared from memory. This includes clearing of the part number. The setup will proceed to step [F5.5].

NO - This advances the setup to step [F5.6] which allows modification of the description, tare or APW values. The existing file will not be cleared.

[F5.5]

SURE ?

Before deleting a file record, the programmer is asked to verify that the record is to be cleared.

YES - The file record stored under the part number entered in step [F5.3] will be cleared. The setup will return to display prompt [F5.3].

NO - The deletion will be aborted and the setup will advance to the next prompt.

[F5.6]

ENTER DESCRIPTION ?

If a description exists in memory for the ID entered, it will be shown on the display in two steps. The first 12 characters will be shown for one second then the last four will be shown for a second then the display will return to the first 12 and wait for an entry. If no description exists, dashes will be displayed instead of characters.

Enter or modify the description as required. Up to 16 characters may be entered. If less than 16 are entered, the ENTER key must be pressed to continue.

[F5.7]

ENTER APW VALUE ?

Using the numeric keys and the decimal point, enter up to seven digits to be stored as the APW (or pieces per weight depending upon step [F2.1]) under the part number entered in step [F5.3]. This value can be recalled from the file record for counting or referenced for a tolerance check after deriving an APW from an actual sample entry. Press ENTER to continue.

[F5.8]

ENTER TARE VALUE ?

Using the numeric keys and the decimal point if required, enter up to six digits to be stored as the tare value in the record for the ID (part number) entered in step [F5.3]. Press ENTER to continue.

[F5.9 N]

CONTINUE FILE ENTRY ?

YES - This will enable the 8582 to step through setup steps [F5.3] through [F5.8] again to add or modify additional file records.

NO - This will end the entry or modification of file records and advance the 8582 the next prompt.

[F5.10 N]

USE FILE APW ?

YES - The values entered for APW and tare in steps [F5.7] and [F5.8] will be accessed and used for counting when a valid part number has been entered. The setup will advance to step [F6].

NO - The tare and APW values stored in the inventory file will not be accessed for counting purposes.

[F5.11 N]

ENABLE APW TOLERANCE CHECK ?

YES - The 8582 will reference the file APW value from step [F5.7] and check to see if the calculated APW from an ac-

tual piece count is within a specified tolerance ([F5.12]) from it.

NO – There will be no tolerance check on a calculated APW value.

[F5.12 1.0]

SELECT APW TOLERANCE VALUE ?

This step selects the acceptable tolerance limit for APW when step [F5.11] is enabled. The two valid selections are 0.2% and 1.0%. The selected percentage is the percent of the stored APW that the calculated APW is allowed to vary. Variations greater than the selected value will initiate an error display of [APW CHECK FAIL] which may be accepted by pressing ENTER or refused by pressing any other key.

YES – This accepts the displayed value as the desired tolerance.

NO – This key updates the display to the alternate selection. Multiple depressions will continue to toggle between 0.2% and 1.0% until YES or ENTER is pressed.

[F5.13 N]

TRANSACTION BUFFER ACTIVE ?

YES – This will format the memory of the 8582 for a transaction buffer and not an inventory file.

NO – This disables the transaction buffer feature of the 8582.

[F5.13 Y]

CLEAR FILE ?

This prompt will occur when the memory configuration is changed from inventory file to transaction buffer or from transaction buffer to inventory file. In order to reformat the memory for the new use, all data must be cleared.

YES – This enables the clearing of all data in memory for reformatting.

NO – This stops the reformatting process and returns the display prompt to [F5.13 TRANS BUFF?].

[F5.13 Y]

SURE ?

This is the last safeguard to prevent clearing of memory by accident. It will only appear if the previous prompt has been programmed as YES.

YES – Memory will be cleared and the setup will advance to step [F6].

NO – Disables clearing of memory and the prompt [F5.13 TRANS BUFF?] will be displayed again.

[F6]

CONFIGURE SCALES ?

YES – To enter into the calibration group of setup parameters. The setup will proceed to step [F6.1].

NO – This bypasses the calibration group of parameters and the 8582 will proceed to step [F7].

[F6.1 N]

TEST MODE ENABLE ?

YES – The weight display will be expanded and a keyboard test will be accessible.

NO – The display will be in the normal mode for counting operations.

NOTE: The 8582 should not be left in the expand mode for weighing. This should be used for installation evaluation and troubleshooting only.

[F6.2 N]

CONFIGURE SCALE 1 ?

YES – To proceed with the calibration procedure for the internal scale of the 8582.

NO – To skip the calibration of the 8582 internal scale.

Allow a minimum of 15 minutes for warm-up before attempting to calibrate the 8582. This warm-up time is required to stabilize the electronics and allow the digital load cell to "warm-up".

[F6.2 00010]

SELECT SCALE 1 CAPACITY ?

The unit is asking what the total capacity of the scale is to be. If the scale is to be used in pounds (lb), your valid selections will be 5 lb, 10 lb, 25 lb, 50 lb, or 100 lb. If the scale is to be used in kilograms

(kg), your valid selections will be 2 kg, 5 kg, 10 kg, 20 kg or 50 kg.

Enter the correct capacity selection for the 8582 (referencing the data plate) by using the numeric keys on the keyboard. Press ENTER to enter the capacity value.

[EMPTY SCL]
EMPTY SCALE

Empty the scale platter then press ENTER.

[CALIB 15]
CALIBRATION TIME OUT

The scale will count down from 15 to 0 while an initial reading is taken.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[ADD WEIGHT]
ADD TEST WEIGHT

Place the selected test weight on the scale platform. This should be an amount close to scale capacity. As much weight as is practical should be used. Press ENTER to continue.

[WGT= 00000]
TEST WEIGHT ?

Enter the exact value of test weights used for calibration. The digits enter from the right and move to the left as the next digit is entered. After the correct value has been selected, press ENTER to continue.

[CALIB 15]
CALIBRATION TIME OUT

The 8582 will count down from 15 to 0 while span is determined.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[WEIGHT OKAY]
TEST WEIGHT ACCEPTED

This display shows that the 8582 has accepted the test weight and has completed its first part of the calibration procedure. Do not remove the test weights at this time.

[CALIB 15]
CALIBRATION TIME OUT

The 8582 will count down from 15 to 0 while span is rechecked.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[EMPTY SCL]
EMPTY SCALE

Empty the scale platter then press ENTER.

[CALIB 15]
CALIBRATION TIME OUT

The scale will count down from 15 to 0 while initial is verified.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[CALIB DONE]
CALIBRATION DONE

This display is shown for approximately 1 second before proceeding to the next prompt.

[F6.2 Y]
ENABLE AUTOZERO MAINTENANCE ?

YES – To enable the autozero maintenance feature for scale 1. AZM will keep the unit on gross zero in spite of small changes in weight of up to 3 minor increments per second.

NO – To disable the autozero maintenance feature.

[F6.2 Y]
CONFIGURE SCALE 2 ?

YES – To proceed with the calibration procedure for scale 2 of the 8582.

NO – To skip the calibration of scale 2 and proceed to the next section.

Allow a minimum of 15 minutes for warm-up before attempting to calibrate the 8582. This warm-up time

is required to stabilize the electronics and allow the load cell to "warm-up".

[F6.3 00200]
SELECT SCALE 2 CAPACITY ?

Enter the correct capacity selection for scale 2 (referencing the data plate) by using the numeric keys on the keyboard then press ENTER. The capacity of the scale must appear in the scale capacity chart below to be accepted.

SCALE CAPACITY CHART

Scale Capacity	Selectable Increment Sizes	Scale Capacity	Selectable Increment Sizes
1	0.0001*,0.0002,0.0005	600	0.1,0.2
2	0.0001*,0.0002,0.001	1000	0.1,0.2,0.5
3	0.0005,0.001	1200	0.2
4	0.0002,0.002	1500	0.5
5	0.0002,0.0005,0.001	2000	0.1,0.2,1
6	0.001,0.002	2500	0.1,0.5
10	0.0005,0.001,0.002,0.005	3000	0.5,1
12	0.002	4000	0.2,2
15	0.005	5000	0.2,0.5,1
20	0.001,0.002,0.01	6000	1,2
25	0.001,0.005	10000	1,2,5
30	0.005,0.01	12000	2
40	0.002,0.02	15000	5
50	0.002,0.005,0.01	20000	1,2,10
60	0.01,0.02	25000	1,5
100	0.01,0.02,0.05	30000	5,10
120	0.02	40000	2,20
150	0.05	50000**	2,5,10
200	0.01,0.02,0.1	60000**	10,20
250	0.01,0.05		
300	0.05,0.1		
400	0.02,0.2		
500	0.02,0.05,0.1		

* – If the 8582 is calibrated in pounds, lb/kg switching will be disabled.

** – If the 8582 is calibrated in kilograms, lb/kg switching will be disabled.

[F6.3 0.01]
SELECT SCALE 2 INCREMENT SIZE ?

This step selects the increment size and decimal point location for scale 2. The increment size and decimal point location are selectable only from the values shown in the capacity chart (see step [F6.3 CAPACITY]).

YES – This accepts the displayed selection as the choice for scale 2 and the 8582 will proceed to the next step.

NO – This toggles the display to the next selecton when one is available.

[EMPTY SCL]
EMPTY SCALE

Empty the scale platter then press ENTER.

[CALIB 15]
CALIBRATION TIME OUT

The scale will count down from 15 to 0 while an initial reading is taken.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[ADD WEIGHT]
ADD TEST WEIGHT

Place the selected test weight on the scale platform. This should be an amount close to scale capacity. As much weight as is practical should be used. Press ENTER to continue.

[WGT= 00000]
TEST WEIGHT ?

Enter the exact value of test weights used for calibration. The digits enter from the right and move to the left as the next digit is entered. After the correct value has been selected, press ENTER to continue.

[CALIB 15]
CALIBRATION TIME OUT

The 8582 will count down from 15 to 0 while span is determined.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[WEIGHT OKAY]
TEST WEIGHT ACCEPTED

This display shows that the 8582 has accepted the test weight and has completed its first part of the calibration procedure. Do not remove the test weights at this time.

[CALIB 15]
CALIBRATION TIME OUT

The 8582 will count down from 15 to 0 while span is rechecked.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[EMPTY SCL]

EMPTY SCALE

Empty the scale platter then press ENTER.

[CALIB 15]

CALIBRATION TIME OUT

The scale will count down from 15 to 0 while initial is verified.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[CALIB DONE]

CALIBRATION DONE

This display is shown for approximately 1 second before proceeding to the next prompt.

[F6.3 Y]

ENABLE AUTOZERO MAINTENANCE ?

YES - To enable the autozero maintenance feature for scale 2. AZM will keep the unit on gross zero in spite of small changes in weight of up to 3 minor increments per second.

NO - To disable the autozero maintenance feature.

[F6.4 Y]

CONFIGURE SCALE 3 ?

YES - To proceed with the calibration procedure for scale 3 of the 8582.

NO - To skip the calibration of scale 3.

Allow a minimum of 15 minutes for warm-up before attempting to calibrate the 8582. This warm-up time is required to stabilize the electronics and allow the load cell to "warm-up".

[F6.4 05000]

SELECT SCALE 3 CAPACITY ?

Enter the correct capacity selection for scale 3 by using the numeric keys on the keyboard. Press ENTER to enter the capacity value. The capacity entered must be a valid build referenced to the scale capacity chart in setup step [F6.3 CAPACITY].

[F6.4 0.5]

SELECT SCALE 3 INCREMENT SIZE ?

This step selects the increment size and decimal point location for scale 3. The increment size and decimal point location are selectable only from the values shown in the capacity chart (see step [F6.3 CAPACITY]).

YES - This accepts the displayed selection as the choice for scale 3.

NO - This toggles the display to the next selecton when one is available.

[EMPTY SCL]

EMPTY SCALE

Empty the scale platter then press ENTER.

[CALIB 15]

CALIBRATION TIME OUT

The scale will count down from 15 to 0 while an initial reading is taken.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[ADD WEIGHT]

ADD TEST WEIGHT

Place the selected test weight on the scale platform. This should be an amount close to scale capacity. As much weight as is practical should be used. Press ENTER to continue.

[WGT= 00000]

TEST WEIGHT ?

Enter the exact value of test weights used for calibration. The digits enter from the right and move to the left as the next digit is entered. After the correct value has been selected, press ENTER to continue.

[CALIB 15]

CALIBRATION TIME OUT

The 8582 will count down from 15 to 0 while span is determined.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[WEIGHT OKAY]

TEST WEIGHT ACCEPTED

This display shows that the 8582 has accepted the test weight and has completed its first part of the calibration procedure. Do not remove the test weights at this time.

[CALIB 15]

CALIBRATION TIME OUT

The 8582 will count down from 15 to 0 while span is rechecked.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[EMPTY SCL]

EMPTY SCALE

Empty the scale platter then press ENTER.

[CALIB 15]

CALIBRATION TIME OUT

The scale will count down from 15 to 0 while initial is verified.

NOTE: If motion is seen by the unit during the count down sequence, the counting will stop and the unit will automatically reset to 15 and start the count down sequence again.

[CALIB DONE]

CALIBRATION DONE

This display is shown for approximately 1 second before proceeding to the next prompt.

[F6.4 Y]

ENABLE AUTOZERO MAINTENANCE ?

YES - To enable the autozero maintenance feature for scale 3. AZM will keep the unit on gross zero in spite of small changes in weight of up to 3 minor increments per second.

NO - To disable the autozero maintenance feature.

[F7 Y]

CONFIGURE I/O PORTS ?

YES - To access the configuration for host interface, I/O Port 1, I/O Port 2 and bar code scanning.

NO - To skip the configuration of the I/O ports and proceed to [F8].

[F7.1 N]

ENABLE MULTIDROP INTERFACE ?

YES - This enables the 8582 networking feature that utilizes an RS-485 multidrop communication for host communications.

NO - The multidrop mode of host communications will be disabled. The standard interface may still be enabled.

[F7.2 OFF]

I/O PORT 1 FUNCTION ?

The 8582 must be programmed for the desired use of I/O 1. The selections are:

CHOICE	DESCRIPTION
QKBD	Qwerty Keyboard Option
MKBD	Membrane Keyboard Option
HOST	Host Interface (Not Valid if [F7.1]=Y)
REMT	Remote Display Option
OFF	I/O 1 Inactive

YES - This accepts the displayed selection as the desired use for I/O 1 port.

NO - This toggles the selection to the next choice each time it is pressed.

[F7.3 OFF]

I/O PORT 2 FUNCTION ?

NOTE: The Serial I/O 2 option or Serial I/O 2 - Memory option is required for this feature to be usable.

I/O 2 cannot be selected for the same use as I/O 1. For example, you cannot use both I/O 1 and I/O 2 as remote display outputs. The three valid selections for I/O 2 use are:

CHOICE	DESCRIPTION
HOST	Host Interface (Not valid if [F7.1]=Y)
REMT	Remote Display
OFF	I/O 2 Inactive

YES – This accepts the displayed selection as the desired use for I/O 2 port.

NO – This toggles the selection to the next choice each time it is pressed.

[F7.4 N]

BAR CODE SCANNING ACTIVE ?

NOTE: The Bar Code option must be installed in order to use bar code input.

YES – This enables bar code scanning.

NO – This disables bar code scanning.

[F8 Y]

CONFIGURE HOST COMMUNICATIONS ?

NOTE: If host communications has not been enabled in Section [F7], Section [F8] will be skipped. The output format selected in this section will become the file format for the transaction buffer.

YES – To access the programming for host communications. The setup will advance to step [F8.5] if step [F7.1] has been programmed as YES.

NO – To skip the programming for host communications and proceed to step [F9].

[F8.1 EVN]

PARITY SELECT ?

Select the type of parity bit to be used in host communications. Selections are:

CHOICE	DESCRIPTION
ODD	Odd Parity Bit
EVN	Even Parity Bit
NO	No Parity Bit
SPC	Parity always a "0"

YES – This accepts the displayed value as the parity selection.

NO – This key advances the display to the next selection each time it is pressed.

[F8.2 N]

CHECKSUM ENABLE ?

YES – A checksum character will be transmitted as part of the host communication.

NO – No checksum character will be included in host communications.

Checksum is defined as the 2's complement of the 7 low order bits of the binary sum of the 7 low order bits of all characters preceding the checksum including STX and CR.

[F8.3 2]

SELECT NUMBER OF STOP BITS ?

YES – This key accepts the displayed value as the number of stop bits required.

NO – This key toggles the selection between 1 or 2 stop bits. Press YES when the correct selection is displayed.

[F8.4 9600]

BAUD RATE ?

YES – This accepts the displayed value as the host communications baud rate.

NO – This key advances the display to the next selection each time it is pressed. The valid selections are 300, 1200, 2400, 4800, or 9600.

[F8.5 069]

SCALE ID NUMBER ?

NOTE: This step will only occur if the multidrop host interface has been selected ([F7.1]=YES).

Select a numeric address from 001 to 250 to assign to this particular 8582 as its identifier. If less than three diqits are entered, press ENTER to continue.

[F8.6 Y]

TRANSMIT ID 1 ?

YES – ID 1 will be sent from the host port.

NO – ID 1 will not be transmitted.

[F8.6 Y]

TRANSMIT ID 2 ?

YES – ID 2 will be sent from the host port.

NO – ID 2 will not be transmitted.

[F8.6 Y]

TRANSMIT ID 3 ?

YES – ID 3 will be sent from the host port.

NO – ID 3 will not be transmitted.

[F8.6 Y]

TRANSMIT ID 4 ?

YES – ID 4 will be sent from the host port.

NO – ID 4 will not be transmitted.

[F8.6 Y]

TRANSMIT GROSS WEIGHT ?

YES – Gross weight will be sent from the host port.

NO – Gross weight will not be transmitted.

[F8.6 Y]

TRANSMIT TARE WEIGHT ?

YES – Tare weight will be sent from the host port.

NO – Tare weight will not be transmitted.

[F8.6 Y]

TRANSMIT NET WEIGHT ?

YES – Net weight will be sent from the host port.

NO – Net weight will not be transmitted.

[F8.6 Y]

TRANSMIT APW ?

YES – APW will be sent from the host port.

NO – APW will not be transmitted.

[F8.6 Y]

TRANSMIT SAMPLE QUANTITY ?

YES – The sample quanatity used for a count will be sent from the host port.

NO – The sample count will not be transmitted.

[F8.6 Y]

TRANSMIT PERCENT ACCURACY ?

YES – Percent accuracy will be sent from the host port.

NO – Percent accuracy will not be transmitted.

[F8.6 Y]

TRANSMIT PIECE COUNT ?

YES – Piece count will be sent from the host port.

NO – Piece count will not be transmitted.

[F8.6 Y]

TRANSMIT TIME ?

YES – The time will be sent from the host port.

NO – The time will not be transmitted.

[F8.6 Y]

TRANSMIT DATE ?

YES – The date will be sent from the host port.

NO – The date will not be transmitted.

[F9]

CONFIGURE PRINTER FUNCTIONS ?

YES – To access the printer program setup when data output is required.

NO – To bypass the Printer I/O setup. The program will proceed to the end of the setup routine.

[F9.1 Y]

PRINTER OUTPUT ACTIVE ?

YES – Data will be output from the printer port whenever the PRINT key is pressed.

NO – The printer output function will be disabled and the rest of the setup will be skipped.

[F9.2 EVN]

PARITY SELECT ?

Select the type of parity bit to be used in the printer output. Selections are:

CHOICE	DESCRIPTION
ODD	Odd Parity Bit
EVN	Even Parity Bit
NO	No Parity Bit
SPC	Parity always a "0"

YES – This accepts the displayed value as the parity selection.

NO – This key advances the display to the next selection each time it is pressed.

[F9.3 N]

CHECKSUM ENABLE ?

YES – A checksum character will be transmitted.

NO – No checksum is transmitted.

Checksum is defined as the 2's complement of the 7 low order bits of the binary sum of the 7 low order bits of all characters preceeding the checksum including STX and CR.

[9.4 0300]

BAUD RATE ?

YES – If the value displayed is the correct baud rate.

NO – The unit will update to another baud rate selection. The choices are 300, 1200, 2400, 4800, and 9600.

[F9.5 1]

PRINT FORMAT ?

This step selects the format of the data when it is transmitted from the printer port. There are six formats available each of which may be inverted by step [F9.8]. The formats are:

CHOICE	FORMAT
1	ID Time & Date Weight APW Count
2	ID Time & Date Weight Count
3	ID Time & Date Weight Sample Quantity APW Count
4	ID APW Count
5	ID Count
6	ID,Time & Date,Displayed Weight,Count

YES – This accepts the displayed value as the selection for the data format.

NO – This advances the selection to the next choice each time it is pressed. After 6 is displayed, the choice will return to 1.

[F9.6 N]

DISPLAYED WEIGHT ONLY ?

YES – Only the gross weight will be sent to the printer port. If a tare is taken, the gross weight will be replaced with the net weight.

NO – The weight field will always contain all of the weight information – gross, tare and net.

[F9.7 1]

WEIGHT FORMAT ?

This step selects the format of the weight field for the printer output. The two possible selections are:

1 – Single Line Format

2 – Multiple Line Format (3 lines)

YES – If the number on the display is the correct number corresponding to the desired format.

NO – If the number on the display is not the correct selection and the display will switch to the other selection.

[F9.8 N]

PRINT FORMAT INVERTED ?

YES – The printer format will be sent in the inverse order from the choice selected in step [F9.5].

NO – The data output will not be inverted.

[F9.9 Y]

PRINT ALL FILE RECORDS ?

YES – All inventory records will print when the inventory file is printed – not just the ones with an accumulator change.

NO – Only file records with a count change in the accumulator will print when an accumulator print is requested.

[F9.10 N]

PRINT ID EXPANDED ?

YES – The ID field will print expanded if the printer is capable of doing so when an ASCII "SO" character is received.

NO – The output will not have the ASCII character "SO" to initiate an expanded print of ID.

[F9.11 N]

PRINT NET EXPANDED ?

YES – The net weight will print expanded if the printer is capable of doing so when an ASCII SO" character is received.

NO – The output will not have the ASCII character "SO" to initiate an expanded print of net weight.

[F9.12 N]

PRINT COUNT EXPANDED ?

YES – The piece count will print expanded if the printer is capable of doing so when an ASCII "SO" character is received.

NO – The output will not have the ASCII character "SO" to initiate an expanded print of pieces.

[F9.13 Y]

ENABLE REPEAT PRINT ?

YES – To enable the repeat print feature.

NO – To disable the repeat print feature.

[F9.14 N]

ENABLE AUTOPRINT ?

YES – The 8582 will automatically send data when a piece count is reached and no motion is present on the scale.

NO – The autoprint feature will be disabled.

[TURN SWITCH ON]

TURN SETUP SWITCH ON

If the setup switch SW1 is off, this prompt will be displayed to indicate it must be turned on at this time to retain the setup.

[TURN SWITCH OFF]

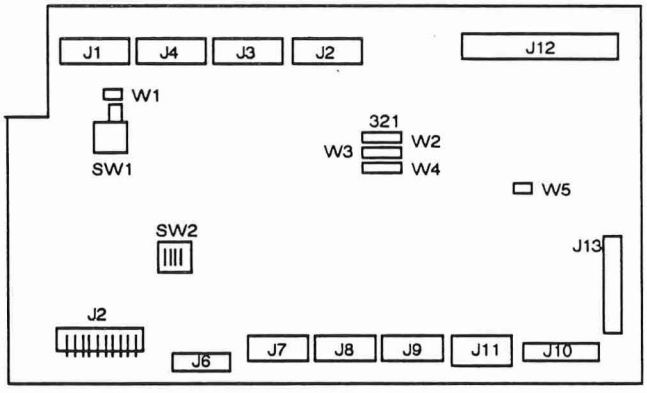
TURN SETUP SWITCH OFF

Turn the setup switch SWI off and reinstall the platter (on desk scales with the 11" X 14" platform) or reinstall the plastic cover plug into the access hole (on desk scales with the 8" square platter) or close and latch the enclosure door on wall type 8582's. See Figure 4 for location of SW1.

E. JUMPER AND SWITCH DESCRIPTIONS

Only three printed circuit boards used in the 8582 contain program jumpers or switches. These three PCB's are shown next with appropriate descriptions.

1. Logic PCB



WI – R5-485 LOADING RESISTOR

This jumper should not be shorting the two pins.

W2 – EPROM SELECT

This jumper must be shorting pin 1 and pin 2 together.

W3 – EPO

This jumper must be shorting pin 2 and pin 3 together.

W4 – PGM

This jumper must be shorting pin 1 and pin 2 together.

W5 – CS (Chip Select)

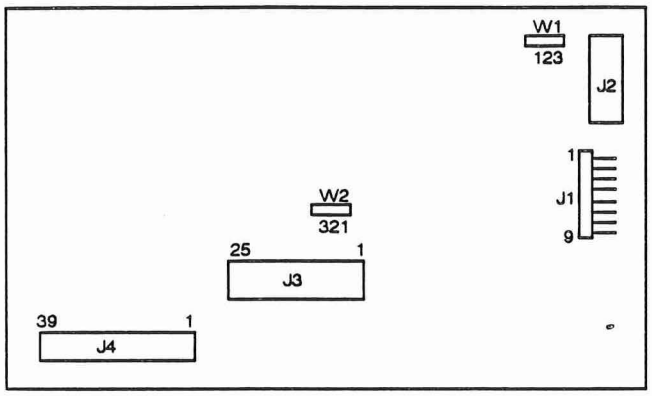
This jumper must be shorting pin 1 and pin 2 together.

SWI – SETUP SWITCH

This switch permits entry into the setup mode of the 8582.

SW2 – NOT USED

2. Analog Scale PCB



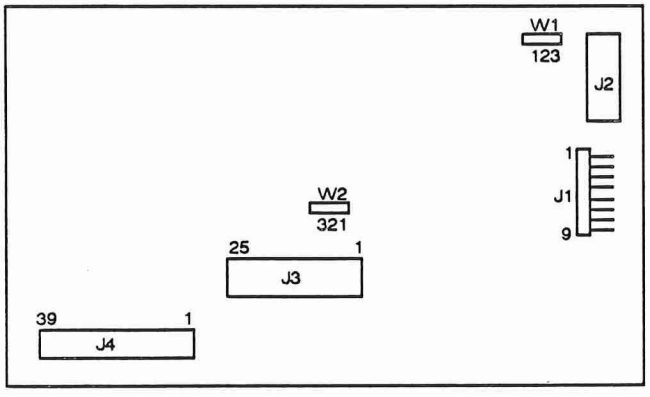
WI - LOAD CELL OUTPUT SELECT

With this jumper between pins 1 and 2, the 8582 is programmed for use with 2mV/V load cells. With this jumper between pins 2 and 3, the 8582 is programmed for use with 3mV/V load cells.

W2 - SCALE SELECT

With this jumper between pins 1 and 2, the scale PCB will be addressed as Scale 3. With this jumper between pins 2 and 3, the scale will be addressed as Scale 2.

3. Digital Scale PCB



W1 - NOT USED

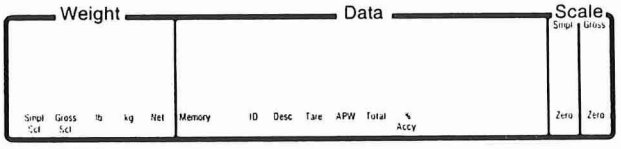
W2 - SCALE SELECT

With this jumper between pins 1 and 2, the scale PCB will be addressed as Scale 3. With this jumper between pins 2 and 3, the scale will be addressed as Scale 2.

V. OPERATING INSTRUCTIONS

A. DISPLAY FORMAT AND LEGENDS

The 8582 utilizes a 19 character vacuum fluorescent dot matrix display that is divided into three separate sections. They are: Weight (5 digits), Data (12 digits) and Scale Selection (2 digits). Each character consists of a 5 X 7 dot matrix with a decimal point and a cursor. The cursors under the display digits indicate exactly what data is being displayed or what data is to be entered.



An explanation for each of the legends below the cursors is given next.

1. Smpl Scl - Sample Scale

   This cursor will be illuminated when the weight display of the 8582 is displaying the weight on the sample scale and there is no motion.

2. Gross Scl - Gross Scale

   This cursor will be illuminated when the weight section of the 8582 display is showing the weight on the gross scale and there is no motion.

3. lb - Pounds

   This indicates the 8582 is in the pounds mode when illuminated.

4. kg - kilograms

   This indicates the kilogram mode has been enabled and the weight shown is in kilograms.

5. Net

   This cursor is illuminated when the weight displayed in the weight field is a net weight. A net weight is the result of subtracting a tare value from a gross weight.

6. Memory

   This cursor will be illuminated during a count sequence, after a file record is pulled from the inventory file. This indicates that a count accumulation may be added to that particular file record.

7. ID - Identification

This cursor will flash when ID is mandatory to indicate an ID must be entered. This cursor will also be illuminated while an ID is displayed during a recall sequence or during the recall of an inventory file record while the ID is displayed.

8. Desc – Description

   This cursor will illuminate only during the recall of an inventory file record while the stored description for that record is displayed.

9. Tare

   This cursor will be illuminated during a recall sequence while the tare value is recalled. It will also illuminate during the recall of an inventory file record while the stored tare value is displayed.

10. APW – Average Piece Weight

    This indicates the APW from a count or from an inventory file record is being displayed during a recall sequence.

11. Total

    This cursor will flash when a piece count above 50 pieces is reached and accumulation is mandatory. This indicates the count. must be accumulated. When a piece count is accumulated, this cursor will flash once to acknowledge the accumulation. The total cursor will also be illuminated when an accumulated total is recalled from an inventory file record.

12. % Accy – Percent Accuracy

    When this cursor is illuminated, it indicates that the calculated percent accuracy is displayed during a recall sequence.

13. Smpl Zero – Sample Scale Zero

    This cursor will illuminate when the sample scale is at gross zero.

14. Gross Zero – Gross Scale Zero

    This cursor will be illuminated while the gross scale is at gross zero.

B. KEYBOARD OPERATION

The desk unit contains a 4 X 5 matrix keyboard for operator interface. The keyboard is domed with tactile feel and has an embossed polycarbonate overlay with ridges to separate active key areas.

The wall version has a 4 X 5 matrix keyboard containing all the operations of the desk keyboard except the wall keyboard is not tactile feel – it is a flat keyboard. In addition to the 4 X 5 keyboard, the wall unit has a 3 X 10 keypad that adds alpha characters, a question mark, a slash, a hyphen and a space character.

1. Digits 0 – 9: These keys are used for entry of ID, APW, sample quantities and tare values.

2. Function: This key allows access to certain operations when followed by the actuation of one of five other keys. They are:

   2.1 (+): This adds the piece count shown on the display to the accumulator when in the inventory file mode. When in the transaction buffer mode, this adds the programmed transaction fields to the transaction buffer.

   2.2 (-): This subtracts the piece count shown on the display from the accumulator when in the inventory file mode. This key will not operate in the transaction buffer mode.

   2.3 Memory: This accesses the recall mode of the inventory file. The PRINT key may be pressed immediately to print the entire inventory file or an individual record may be recalled for viewing by entering the desired record ID when prompted.

   2.4 Recall: This enters the recall mode to examine current transaction data. Sequential depressions of the ENTER key after entering the recall mode will advance the display through ID, Tare, APW and percent accuracy. The CLEAR key exits the recall mode. This feature operates only in the count mode, if in order dependent mode.

   2.5 Scl Sel: The scale select key will toggle the available selections of gross and sample scales as viewed at the right end of the display. Repeated actuations of the SCL SEL key will advance the 8582 to all possible selections. Only active scales may be selected. Pressing the ENTER key accepts the displayed scale numbers as the selection for the gross and sample scales.

3. (.): The decimal point is used for tare or APW entry. It is not active for entry of ID. Depressing this key after applying power via the ON/OFF switch will allow the operator to gain access to the operator selectable parameters F1.2 through F1.10.

4. Yes: This key is used to answer programming prompts during the setup procedure. It normally enables the displayed selection shown in setup.

5. No: This key is also used to answer programming prompts during the setup procedure. The NO answer normally disables the selection shown in setup.

6. Zero: Provides the ability to rezero a gross weight on the scale over a range of +/-2% of the programmed full scale capacity. Also, after a tare has been entered, depressing the ZERO key results in the weight display switching to gross weight for approximately 2 seconds and then returning to net.

7. Sample: This key is pressed before a sample entry when the 8582 is used in the order independent mode. It tells the 8582 that the operator is ready to enter the sample quantity. When in the order dependent mode, this key toggles the sample reference to the other selections when the display shows [SAMPLE = X] (variable sample only).

8. APW: This key is pressed before an APW entry when the 8582 is programmed for order independent operation. It tells the 8582 that the operator is ready to enter the APW value.

9. Enter: This key terminates all numeric and ID entry to the 8582. The ENTER key is also used to auto tare a weight on the scale when the display shows [TARE ?]. This key advances the 8582 through the recall mode and can also be used to skip ID entry if ID is not mandatory.

10. Clear: When entering any data, a single depression of the CLEAR key will erase the data entered; a double depression will exit the data entry mode. When not in a counting sequence (no sample has been entered) a single depression of the CLEAR key clears any tare weight that has been entered, returning the weight display to gross mode. During a counting sequence a double depression of the CLEAR key exits the counting mode and clears tare weight and APW.

11. ID: This key is pressed before an ID entry when the 8582 is programmed for the order independent mode. It tells the 8582 that the operator is ready for ID entry.

12. Tare: This key should be pressed before a tare entry when the 8582 is programmed for the order independent mode. This indicates the operator is ready to enter a tare value.

13. Print: When this key is pressed with no motion on the scale, data will be transmitted from the printer I/O connector according to programming in section [F9]. If motion is present, this command will be retained and acted upon when motion ceases. This output can be disabled in setup.

C. INITIAL POWER-UP SEQUENCE

When power is first applied to the scale (via the power switch on the right side of the base near the front) the following sequence will occur.

1. Every other dot of all the characters on the display will be illuminated and all cursors with a legend under them will also be illuminated for approximately 2 seconds then blank.

2. All the dots not illuminated in step 1 will now be illuminated and all cursors with a legend under them will turn on again for approximately 2 seconds then blank. This completes the display verification routine.

3. The next display will indicate model [8582] in the Weight section while the program part number [B129329 00A] will be displayed in the Data section. This will be on for approximately 2 seconds then blank.

4. The display will then show [TESTING] while internal hardware tests are initiated by the 8582. RAM and ROM checks are done as well as communications between PCB's. Errors that may be displayed are described in the troubleshooting section of this manual.

5. The next display of the 8582 will show [CHECKING MEM] if memory (either the inventory file or transaction buffer) has been enabled. A checksum value is calculated and stored for each file record then verified at power up. If the stored checksum does not agree with the value the 8582 recalculates at power up, the display will show [XXXX RECORDS BAD] indicating the number of bad records. These defective records will automatically be cleared by the 8582.

6. The 8582 will then show the number of total records in memory by showing [XXXX RECORD TOTAL]. This total will include any bad records noted in the previous step.

7. If enabled in setup, the time then the date will be displayed for approximately two seconds each.

8. If error messages [NOVRAM CHECK ERR] or [EXTERNAL RAM CHK ERR] occur, setup must be entered and stored to calculate a new setup checksum value.

9. The last step of the power up sequence is the capturing of zero on the gross scale then the

sample scale. If the weight indication is within +/- 2% of scale capacity, zero will automatically be captured by the 8582 and the scale will be ready for use. If outside of the zero capture range, an error display of [SCLX UNDER] or [SCL X OVER] will be shown until zero can be captured.

D. OPERATING SEQUENCES

The Model 8582 provides a great deal of operating flexibility to the scale user. The unit can be configured in setup to perform a very specific user defined sequence of operation, or if preferred, be programmed to operate in a different (independent) sequence from one transaction to the next. The Model 8582 offers a variety of selectable operating schemes to the user. Depending on the preferred scheme, the scale can be configured to operate in a dependent sequence or an independent sequence. The different schemes are described next.

1. DEPENDENT OPERATION

   For users that prefer operating simplicity, the Model 8582 can be programmed to operate in specific or dependent sequence. The operating sequence is defined by the user and configured in the setup mode. If a dependent sequence is selected, the operator will be prompted to input data in a particular sequence. After each entry, the scale display will automatically prompt the operator to input any remaining data required to complete the count or weight transaction. Multiple fields of transaction Identification, tare weight, sample quantity, and/or average piece weight are input based on the preferred dependent sequence minimizing practically all operator uncertainty.

   The Model 8582's programming flexibility allows the unit to be configured in many different dependent sequences. The Model 8582 Operator's Reference Guide should be referenced for a detailed description of the various dependent operating sequences.

   1.1 If the Model 8582 is programmed to operate in the dependent mode, all keyboard data entries are terminated with the ENTER key. A typical sequence of operation might be:

   a. 000.00 TARE?

   The operator is being prompted to input the weight of the empty box, bin, or skid that will be used to contain the items being counted or weighed. Place the container on the gross scale and press the ENTER key. If desired, the weight of the container may be digitally entered via the keyboard. The ENTER key is used to complete the entry.

   b. 00.000 SAMPLE = 010

   Place a sample of the pieces that are to be counted on the sample scale. If a fixed sample is preferred, place the displayed sample quantity on the scale and press the ENTER key. If a reference sample quantity is not preferred, the size of the sample can be digitally entered via the keyboard before the ENTER key is pressed. The scale will calculate an average piece weight and is now ready to count. Place pieces on the gross scale until the desired quantity is achieved.

   1.2 Another typical sequence of operation might be:

   a. 000.00 TARE?

   Place the empty container on the gross scale (or digitally input the tare value). Input the tare weight of the box, bin, or skid using the ENTER key.

   b. 00.000 APW?

   Input the weight of the piece that is to be counted via the keyboard and press the ENTER key. The system is now ready to count. Load the scale until the desired quantity is counted.

   1.3 If a printer or peripheral computing device is used with the scale, a typical sequence of operation might be:

   a. 000.00 PART NUMBER?

   Input the part number or identification via the standard digital (or optional alphacharacter) keyboard, then press the ENTER key.

   b. 000.00 JOB LOT?

   Input the next field of desired identification data via the keyboard, then press the ENTER key (for a more detailed description of the Transaction Identification feature, see the Operator's Reference Guide).

   c. 000.69 TARE ?

   Place the empty container on the gross scale and press the ENTER key. If desired, the weight of the container can be digitally entered via the keyboard.

   d. 00.048 SAMPLE = 010

   Place the sample reference quantity on the sample scale and press the ENTER key. If preferred, a variable reference can be used to calculate average piece weight. Place the sample on the scale,

digitally enter the quantity then press the ENTER key. The system is now ready to count.

1.4 As an alternative to counting pieces that are placed in or on a container, the Model 8582 can be used to count pieces that are removed from a container. A typical sequence might be:

a. 000.00 PART ID?

Input the identification data (if required) via the keyboard, then press the ENTER key.

b. 079.00 TARE?

Place the loaded or full box, bin, or skid on the gross scale, the

b. 079.00 TARE?

Place the loaded or full box, bin, or skid on the gross scale, then press the ENTER key.

c. 000.13 SAMPLE = 010

Remove a sample reference from the container (place the sample on the sample scale if operating a two-scale system). Press the ENTER key if the stored sample reference quantity is used or input the variable quantity via the keyboard before the ENTER key is pressed. The scale is now ready to count additional pieces that are removed from the container.

1.5 If the contents of a full container are to be counted on a single scale, a typical sequence might be:

a. 001.37 TARE?

Enter the weight of the box, bin, or skid via the digital keyboard, then press the ENTER key.

b. 13.965 SAMPLE = 010

Remove a sample reference from the container; if a quantity different from the stored reference is removed, digitally enter the value via the keyboard. Press the ENTER key. The total count in/on the container will be displayed.

The typical dependent operating sequences are examples of the many different options that are selectable when configuring (setting up) the scale. Consult the Model 8582 Operator's Reference Guide for a more detailed description of dependent operation. Regardless of the specific operation that is selected, the sequence will be repeated from one transaction to the next. Prompts will all but eliminate any operator uncertainty. Even the most sophisticated transactions are simplified since the dependent mode relies solely on the use of the ENTER key.

2. INDEPENDENT OPERATION

If the user does not prefer the Model 8582's self-prompting dependent mode of operation, an independent mode can be enabled during setup. The independent mode of operation allows the user to input data or process transactions in sequences independent from others. The independent mode of operation is ideal for applications where consecutive count or weight transactions are not completed in a like manner. Transaction data can be input randomly in any order enhancing the operating flexibility of the system.

If the independent mode of operation is selected, all data input is preceeded by a designated key. The four keys that are most frequently used in the independent mode of operation are ID, TARE, APW, and/or SAMPLE. One of these keys must be pressed prior to any data entry. As with the dependent mode of operation, all keyboard data entries are completed using the ENTER key.

2.1 A typical transaction operating in the independent mode might be:

a. 25.778

Place a box, bin, or skid of parts on the gross scale. Press the APW key if a known average piece weight is to be entered via the digital keyboard. After the APW has been input, press the ENTER key. The total weight on the scale will be displayed as a count.

b. 25.778 1256 PCS

Press the TARE key if the weight of the container is known. Digitally enter the value via the keyboard, then press the ENTER key. The tare weight is subtracted from the gross and the net weight is displayed as a piece count.

2.2 The next transaction may require an empty container to be filled with a predetermined quantity. A typical sequence might be:

a. 01.240 TARE?

Place the empty container on the gross scale, then press TARE, followed by ENTER.

b. 00.024 SAMPLE = 005

Press the SAMPLE key, then place the desired sample size (stored reference or any variable quantity) on the sample scale. Enter the quantity via the keyboard

(if different than the reference quantity)# then press ENTER. The system is now ready to count. Fill the container to the desired quantity.

c. If the transaction requires identification data to be input (single or multiple lines), press the ID key prior to inputting the identification data. The ENTER key is used to complete the entry.

The independent mode of operation offers maximum flexibility from one transaction to the next. The same Model 8582 can be used to complete very sophisticated transactions; or if required, calculate a simple count or weight avoiding a series of extraneous keyboard entries.

The procedure to configure the Model 8582 in the dependent or independent modes of operation is described in the setup section of this manual is step [F4.4].

E. OPERATING ZONES

Four distinct zones of counting exist in relation to the weight on the platter. These zones are shown in the following table and discussed more fully in the following four sections. Note that if sample enhancement is disabled zone 3 does not exist. Note also that if the minimum sample weight is chosen as 0.0% then zones 1 and 2 essentially do not exist and the APW computation may have a large error. A non-zero tare should be taken before using small sample weights when 0.0% is chosen to disable AZM.

Zone	Weight	Condition
1	Below Minimum APW Computation (Below 2 display increments).	No sampling. Display shows "LOW SAMPLE".
2	2 Display Increments to Minimum Sample Wt.	Sampling allowed. Display shows "Add-x".
3	Minimum Sample Weight to 4%. Print allowed.	Count Mode. APW Enhancement allowed. Display shows selected data field.
4	4% to Scale Capacity Print allowed.	Normal Counting Mode. No Enhancement. Display shows selected data field.

ZONE 1

Average piece weight (APW) cannot be accurately computed below 2 increment counts. Any attempt to enter a sample piece count by pressing the SAMPLE key will result in the message "LOW SAMPLE" in the data display. The operator should add samples and enter the new sample count until the "LOW SAMPLE" message does not result.

ZONE 2

In setup the 8582 can be set up to permit the operator to continuously update the average piece weight based on larger and larger samples (Setup step [F1.8]). A minimum APW weight, as defined in Zone 1 previously, is required for the initial calculation of APW. As additional pieces are placed on the scale, each time the scale sees a motion/no-motion sequence, a new APW is calculated, based upon the new total sample weight with the sample count calculated using the APW previously established. See Section V, Part F for further discussion of APW enhancement.

Minimum sample weight is selected during Setup as 0.0%, 0.02%, 0.05% or 0.1% of scale capacity. The display shows "Add(x)", when the sample weight is below the minimum selected. (x) is the value of additional pieces required to reach the minimum sample requirement. It is calculated by using the original sample to calculate an APW, and using this APW to calculate the maximum number of pieces allowed which will permit enhancement of the APW. If this maximum is exceeded, "OVER" will be displayed and the operator should remove parts until a motion/no-motion sequence does not result in the "OVER" display. Adding pieces to the scale when "OVER" is displayed will enter the 8582 into the counting mode with enhancement disabled.

A manual sample acceptance mode is also selectable in the setup mode which requires an exact number of samples (x) be added and the ENTER key pressed. This results in the most accurate APW.

ZONE 3

From the minimum sample weight to 4% of scale capacity the scale is in full counting mode. Printing may be done as desired. The APW will be enhanced if selected by setup step [F1.8] throughout this range, unless too many pieces are added to the platter. If the count of pieces added exceeds the number which can be reliably counted using the previous APW, the display shows "OVER ENH RNG" (over enhancement range) for 2 seconds, after which the count is again displayed. If the operator

wishes to continue APW enhancement pieces must be removed until each motion/no-motion sequence no longer results in the "OVER ENH RNG" display. APW enhancement then occurs.

If the operator ignores the "OVER" display and adds more pieces or prints, no further APW enhancement is possible for the current transaction. Once the counting weight reaches 4% of scale capacity, APW enhancement is discontinued.

ZONE 4

From 4% to 100% of scale capacity is the normal counting zone, during which the displayed APW will not change and no APW enhancement is done.

F. AVERAGE PIECE WEIGHT ENHANCEMENT

The initial computed value of average piece weight (APW) may not have the accuracy needed to reliably count large numbers of small pieces. This problem is inherent in a single scale parts counter, since it must have the weighing range to count large quantities of parts. To compensate for this, the APW is allowed to be enhanced constantly up to 4% of scale capacity. In order to ensure a minimum APW initial accuracy, a minimum sample weight of 100 counts is required. APW's below this value should be accurately determined on a more sensitive scale then entered via the keyboard of the 8582.
APW enhancement is based on the fact that an inaccurate APW, while not able to count large numbers of parts, will very reliably count a small number of pieces. This count will then allow a new determination of APW based on a larger weight. Given enough enhancements the APW will become very accurate.

Enhancement occurs on a motion/no-motion sequence with the following two conditions satisfied:

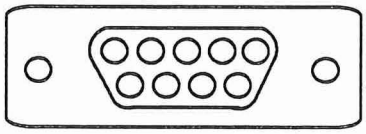
1. Pieces must have been added that is, the weight must have increased (or decreased in count out mode).
2. The pieces added (or removed) must not exceed the amount which can be counted accurately with the current APW. A display of "OVER ENH RNG" (over enhancement range) results when this amount is exceeded.

VI. LOAD CELL CONNECTIONS

A. ANALOG LOAD CELL CONNECTIONS

NOTE: Do not attach an analog scale base to a digital scale input or a digital scale base to an analog scale input of the 8582 or damage will result.

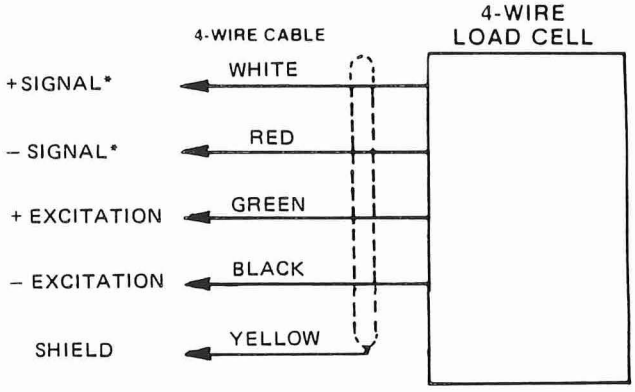
1. 8582 Pin Configuration (9 pins)



PIN	DESCRIPTION
1	+ Excitation
2	+ Sense
3	Shield
4	- Sense
5	- Excitation
7	+ Signal
8	- Signal

2. Standard Load Cell Input/Output

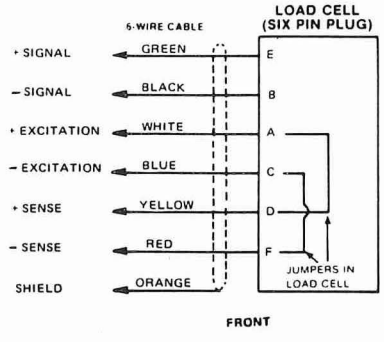
2.1 Four wire load cells



NOTE: When connecting a four wire load cell to the 8582, always jumper + excitation to + sense and – excitation to – sense at the junction closest to the load cell.

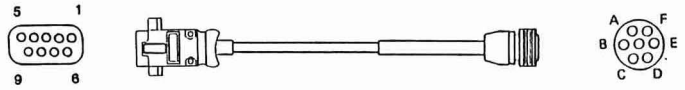
* When using a Model 951 load cell in tension, reverse the signal wires from that which is shown above, i.e. + Signal is red and – Signal is white.

2.2 Six wire load cells



3. Adaptor Cable

This adaptor cable part number B117611 00A provides a way to connect 16 gauge load cell cable to the 8582. It requires the use of a 7 pin MS type mating connector.



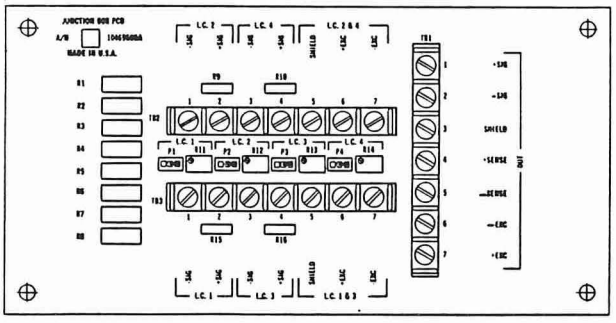
PIN	DESCRIPTION
1	+ Excitation
2	+ Sense
3	Shield
4	- Sense
5	- Excitation
7	+ Signal
8	- Signal

PIN	DESCRIPTION
A	+ Signal
B	- Signal
C	+ Excitation
D	- Excitation
E	+ Sense
F	- Sense
G	Shield

4. Junction Box Connections

4.1 Low Profile Style

Terminal strip TBI is the output terminal strip to the 8582. It should be wired as shown.



TB1 TERMINAL	SIGNAL DESCRIPTION
1	+ Signal
2	- Signal
3	Shield
4	+ Sense
5	- Sense
6	- Excitation
7	+ Excitation

Terminal strips TB2 and TB3 are the connections for the load cells. Wire the load cells as described below. See part 2 of this section for load cell color code. Note that load cell will be abbreviated as L/C in this chart.

TERMINAL	TB2 DESCRIPTION	TB3 DESCRIPTION
1	- Signal L/C 2	- Signal L/C 1
2	+ Signal L/C 2	+ Signal L/C 1
3	- Signal L/C 4	- Signal L/C 3
4	+ Signal L/C 4	+ Signal L/C 3
5*	Shields	Shields
6**	+ Excit. L/C 2 & 4	+ Excit. L/C 1 & 3
7**	- Excit. L/C 2 & 4	- Excit. L/C 1 & 3

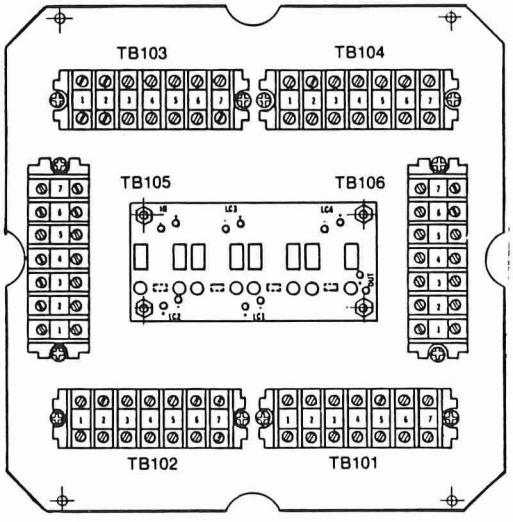
Note that no sense leads are connected from the load cells.

* A load cell shield connection is not required when all load cells are contained within one steel understructure.

** Terminals 6 and 7 will each have two wires connected to them. One wire will go to each load cell supplied.

NOTE: Toledo Scale now uses a dual shield cable. The ground shield (green with yellow stripe) connects to structure (chassis) ground in the junction box, and to the metal shell of the cable clamp at the 8582.

4.2 Vehicle Style



On terminal strips TB101*, TB102. TB103 and TB104 a load cell is connected using the following guide. See part 2 of this section for load cell color code.

TERMINAL	SIGNAL DESCRIPTION
1	+ Signal
2	- Signal
3	Shield
4	- Excitation
5	+ Excitation
6*	+ Sense
7*	- Sense

TB105 is the input terminal strip that another junction box output would connect to if multiple junction boxes were required. The wiring is the same as TB101 - TB104.

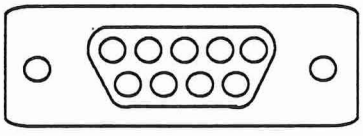
TB106 is the output terminal strip to the digital indicator. The wiring for this is the same as TB101 - TB104.

* If four wire load cells (no sense leads) are used, there must be two jumpers installed on TB101. The two jumpers must be placed from terminal 4 to terminal 7 and from terminal 5 to terminal 6. These jumpers are not required with 6 wire cells. If four wire load cells are used, no wires will be connected to terminals 6 and 7 on TB102, TB103, and TB104.

B. DIGITAL LOAD CELL CONNECTIONS

As of July, 1987,Toledo Scale does not offer an external digital load cell understructure. Additional information regarding this will be available in the near future.

1. Pin Configuration (9 pin)



PIN	SIGNAL DESCRIPTION
1	Transmit +
4	Transmit -
5	+22 Volt Supply
6	Receive -
7	Logic Ground
8	Receive +

VII. INPUT/OUTPUT DESCRIPTIONS

A. PRINTER PORT

The printer port provides both active 20mA current loop and RS-232-C communications. The baud rate is selectable as 300, 1200, 2400, 4800 or 9600 baud. Parity may be even, odd or always a "0". All data will be in an 11 bit frame.

1 - Start bit
7 - ASCII coded data bits
1 - Parity bit
2 - Stop bits

A checksum character is selectable in setup to provide data verification. Also selectable is expanded printing of ID, net weight and piece count using the ASCII characters "SO" and "SI".

1. Pin Configuration (25 pin connector)

PIN	DESCRIPTION
2	TxD (RS-232)
3	RxD (RS-232)
7	Logic Ground
8	+ Receive (20mA)
9	+ Transmit (Active 20 mA)
10	- Receive (20mA)
13	+10 Volts DC
22	- Transmit (Active 20mA)

All pins not shown are not connected at the 8582.

2. Data Output Notes

2.1 If a tare is not taken and tare and net fields have been programmed to print, the tare and net lines will remain blank.

2.2 If ID is programmed to print but not entered, that line will be blank.

2.3 The ID field will print in the format that it is entered in from setup selection [F4.2].

2.4 If the inverse format is selected, time and date will still follow ID.

2.5 If an APW fails a tolerance check (step [F5.11] enabled) there will be an asterisk printed after the APW value to indicate the failure.

2.6 Non significant leading zeroes will be transmitted as spaces.

2.7 If a particular field is selected not to print, all following fields will be shifted up accordingly.

3. Repeat Print

The operation of the repeat print function is the same in both the weigh and count modes.

3.1 Repeat Print Disabled

When repeat print is turned OFF, only one print is permitted after weight is applied to the scale. Additional print requests are ignored until the scale returns to gross zero or until the CLEAR key is pressed twice. The recall function remains active throughout the sequence.

3.2 Repeat Print Enabled

When repeat print is turned ON, the weight and count display will lock after a print request. Repeated prints of this information are available using the PRINT key. If pieces are added to the scale (or removed in the count down mode) in an amount greater than one display increment, the 8582 will unlock the display when motion ceases. The RECALL key will then become active and a print of the new values is possible. After a print, the display will lock and multiple prints of these values are possible.

4. Autoprint

This feature enables the 8582 to automatically output data when a no-motion count of 50 pieces above the sample count is reached. This feature is not functional until a count is made. The repeat print feature may also have an effect on autoprint.

5. Inventory File Report Format

All inventory file records or only those records with a net change to the accumulator (step [F9.9]) can be printed in a report. To initiate this printout, press the FUNCTION key, the MEMORY key then the PRINT key. The Toledo Model 8840 (or comparable printer capable of printing 67 characters on a line) must be used. Each file record will print on a single line in the following format.

<STX> (16 digit part ID) <SP> (16 character description) <SP> (8 digit count total) <SP> (8 digits net change to accumulator) <SP> (6 digit APW with decimal point and field descriptor) <SP> (5 digit tare with decimal point and field descriptor) <CR><LF>

NOTE: Angle brackets denote an ASCII character and parenthesis contain field descriptions.

Pressing the CLEAR key while the print out is in progress will stop the file print.

To print a single inventory file record, press FUNCTION then the MEMORY key. When prompted for the ID, enter the part number for the record you wish to print. When the record is accessed, press the PRINT key. Press CLEAR to exit this mode.

B. SERIAL PORT I/O 1

1. Description

Either RS-485 or RS-232-C (with handshaking) is available at I/O 1. This port can be programmed as an input for either of the keyboard options (desk version only) or it can be used for a remote display or for host communications (non multidrop). The configuration for this port is done in the normal setup programming section [F7].

When programmed for a remote display, continuous count data will be transmitted when in the count mode. The protocol for host interface is described in detail in Section VII, Part F.

2. Pin Configuration (9 pin connector)

I/O 1 PIN	DESCRIPTION
2	RxD (RS-232)
3	TxD (RS-232)
4	+10 VDC (DTR)
5	Logic Ground
6	A (RS-485)
7	RTS (RS-232)
8	CTS (RS-232)
9	B (RS-485)

C. SERIAL PORT I/O 2 (OPTIONAL)

1. Description

This optional kit adds another serial port for a remote display or for host communications if I/O 1 is already utilized. Only RS-232-C (with handshaking) is available as the type of data communication. If the port is programmed for use with the Toledo Model 8622 remote display, the count will be continuously transmitted when in the count mode. The protocol for use in host interface is described in Section VII, Part F.

2. Pin Configuration (9 pin connector)

I/O 2 PIN	DESCRIPTION
2	RxD (RS-232)
3	TxD (RS-232)
4	+10 VDC (DTR)
5	Logic Ground
7	RTS (RS-232)
8	CTS (RS-232)

D. BAR CODE SCANNING (OPTIONAL)

Bar code scanning is provided through the bar code option which also requires the use of the Serial I/O 2 - Memory option. Industrial formats Code 39 and Interleaved 2 of 5 are supported without changing any switches or setup in the 8582. (Interleaved 2 of 5 only supports numeric digits 0-9). The 8582 is capable of reading labels of up to 16 digits for ID, 6 digits of tare data, and 7 digits for APW data. Before reading a label for a value, the proper prompt must currently be displayed. For example, the [TARE?] prompt must be displayed before a tare can be scanned.

Numeric data must come first on the label and trailing descriptors are stripped off. For example, a label containing the data:

1 LB TR

will be read as 1 pound for a tare or APW.

Data for a tare value will be rounded to the nearest whole increment which gives the 8582 the capability of reading the bar code labels it generates on a Toledo Model 8860 printer. Keyboard tare must be enabled in order to scan a label for tare entry. ID labels cannot contain decimal points.

E. REMOTE DISPLAY

1. Description

   The remote display output from the 8582 is designed to operate with the Toledo Model 8622 remote display. The 8622 can be attached to either I/O 1 or I/O 2. The maximum cable length to the 8622 is 50 feet.

   The display of the 8622 will remain blank until the 8582 enters the count mode at which time the 8622 will show the piece count but it will not display the PCS legend. The legends illuminated will be lb and gross.

NOTE: The printer output of the 8622 is not usable when configured with the 8582.

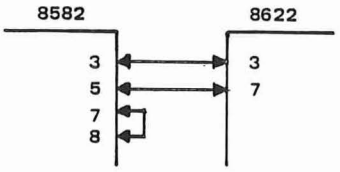
2. 8622 Programming

   The 8622 remote display must be programmed with the following setup selections.

STEP	SELECTION	DESCRIPTION
F1.1	0	RS-232 Interface
F1.2	0	Continuous Mode
F1.4	9600	Baud Rate
F1.5	1	Checksum Enabled
F1.6	0	Timeout Disabled

3. Interconnect Cable

   The cable between the 8582 and 8622 is configured as shown.



F. HOST COMMUNICATIONS (Non-Multidrop)

This communication is used when a host computer is to interface to a single 8582 in order to:

- Input values for ID, tare, APW or sample quantities to the 8582.
- Zero the displayed scale.
- Clear the 8582 display to the home position.
- Obtain access to the data in the transaction buffer.
- Add or subtract count quantities from an inventory file record.
- Select different scales for gross and sample use.
- Upload and download complete file records in the inventory file mode.

This interface does not support communication to multiple 8582's. Reference the next section for multidrop applications.

1. Description

   Either I/O 1 or I/O 2 may be used for this interface. Port I/O 1 offers both RS-232-C and RS-485 communication while I/O 2 offers only RS-232-C. The baud rate is selectable as 300, 1200, 2400, 4800 or 9600 baud. Parity may be selected as even, odd, always a "0" or no parity bit. The number of stop bits is selectable as either one or two.

   The CTS handshaking line is used by the 8582 and must be tied to RTS if not utilized by the host. CTS must respond within 500ms of a communication or the command will be aborted.

   Input data is free format with a maximum number of digits as noted. A decimal point is needed only if data interpretation requires it. Leading zeroes are not required ("0.12" may be entered as ".12"). The Carriage Return (CR) character is used to terminate a command.

2. Handshaking

RTS – This output will go to +10VDC when the 8582 is ready to receive data from the host.

CTS – This input is monitored by the 8582 before transmitting any data. If this line is at -10VDC, no data will be sent until the line changes to +10VDC. After receiving a command from the host, this line will be checked for a true condition for up to 500ms before aborting.

3. Checksum

Checksum is selectable for the file handling commands (Section VII, part F.5 in this manual) and print command only. Checksum characters are not used for any of the other commands. The checksum characters are a two ASCII digit representation of the binary Xor of all characters in the record before the carriage return; for example, a 3AH checksum will be sent as the ASCII characters "3" followed by "A".

4. Operating Commands

The external commands that will be recognized by the 8582 are described next with descriptions when required. The brackets <> are for clarity only and must not be transmitted. All letters sent must be capital letters. CR represents the ASCII Carriage Return character.

Command Format	Description
<Z> <CR>	Zero the current scale if within +2% of capacity from zero.
<T> <CR>	Tare the gross scale to net zero.
<T> <XX.XXX> <CR>	Enter the digital value transmitted as the tare value for the gross scale. From 1 to 5 digits (plus decimal point) may be transmitted. Keyboard tare must be active.
<C> <CR>	Clear the scale to home position.
<S> <CR>	Enter the sample count displayed. Sample pieces must be on the scale.
<S> <XXXX> <CR>	Enter the number of pieces (XXXX) as the sample count. Four digits maximum. Sample pieces must be on the scale.
<A> <X.XXXXX> <CR>	Enter the value transmitted (up to 6 digits plus decimal point) as either the APW or PCS/wt depending upon setup step [F2.1].

5. File Commands

The following commands may only be executed while the scale is at the home position. With exception of the clear single accumulator and delete single record commands, the scale will display [BUSY] while file access is in process and the scale may not be used during this time.

The host will determine the number of retries in case of error. The 8582 will retransmit a record when a <B> is received until an <N> is received or time out for no data occurs (30 seconds). If the 8582 responds with a <B>, the host must try to receive the record until an <N> is received or time out for no data occurs.

The file commands that will be recognized by the 8582 are described next with descriptions when required. The brackets <> are for clarity only and must not be transmitted. All letters sent must be capital letters except for the field identifiers in the file records (<P> command). CR represents the ASCII character Carriage Return.

<D> <CR>	Request from the host to download an inventory file record to the 8582.
<U> <CR>	Request from the host for the 8582 to upload its transaction buffer or its first inventory file record to the host.
<W> <CR>	This is transmitted by the 8582 when it is busy or not in the home position and cannot respond to a host request. The host must wait and retry later.
<G> <CR>	This command serves two purposes. When transmitted by the 8582 after a <D> or <U> request, it signifies the 8582 is ready to receive or transmit data. Secondly, the <G> indicates that a file was received successfully and

the next record may be sent. It may be sent by either the host or the 8582 when used the second way. The data format for the inventory file mode is described under the <U> <X> <CR> command while the transaction buffer's format is described under the <P> <CR> command.

<N> <CR> — When transmitted by either the host or the 8582, this indicates that the file access is done and to abort the access mode.

<B> <CR> — Requests the last inventory file record or the last transaction sent from the transaction buffer be repeated.

<D> <X> <CR> — This downloads an inventory file record from the host to the 8582's memory. <X> represents the inventory file record data received from the host. This data consists of: 16 characters of a part number (ID), 16 characters of description, 6 digits of tare, 7 digits of APW, 8 digits of count total and 8 digits of net change to the accumulator. This command does not function in the transaction buffer mode.

<U> <X> <CR> — This requests that the 8582 send a file record requested by the host. <X> represents the 16 digit part number (ID) of the record. The 8582 responds with <U> <X> <CR> where X is the record data. This data will be in the format:

16 character part number (ID), 16 characters of description, 6 digits of tare, 7 digits of APW, 8 digits of total count, 1 character for accumulator overflow flag (space if no overflow, <*> if accumulator overflow) and 8 digits for net change to the accumulator. This command does not function in the transaction buffer mode.

<L> <CR> — Message from the 8582 during a download indicating that no more record space exists, only records which are to be modified may be accessed.

<I> <XXX> <CR> — Enter an ID where X represents the alphanumeric ID (up to 16 digits) received from the host.

<M> <+> <CR> — Add the current piece count to the selected accumulator.

<M> <-> <CR> — Subtract the current piece count from the selected accumulator.

<F> <XX> <CR> — Select the sample and gross scales where XX is the scale selection. The first X is the sample scale selection (1, 2, or 3) and the second X represents the gross scale selection (1, 2, or 3).

<P> <CR> — Print command. The response to this command will be the transmission of data fields (selected in step [F8.6] from the current transaction data on a single line. The field lengths and identifiers are described next in the order they will be transmitted. The maximum number of characters that could be sent is 99.

<i> <16 to 32 characters of ID depending upon setup>

<g> <6 digits of gross weight including decimal point>

<t> <6 digits of tare weight including decimal point>

<n> <7 digits of net weight including decimal point and minus sign or space>

<a> <8 digits of APW including a space or * to indicate APW tolerance failure>

<s> <4 digits of sample quantity>

<y> <5 digits of percent accuracy>

<c> <6 digits of count>

<m> <5 digits of time including colon for 24 hour format or 7 digits including colon and AM or PM for 12 hour format>

<d> <8 characters of date including two slashes – month/day/year>

<O> <X> Clear the piece count accumulator for a single inventory file record, where X is the part number (ID).

<O> <CR> Clear all accumulators for all files.

<E> <X> <CR> Command from the host to delete a single inventory file record, where "X" is the part number of the record.

<E> <CR> Command from the host to delete the entire file. NOTE: This will delete all records from the memory of the 8582.

6. Communication Example

6.1 Upload Request

Host sends:

<U> <CR> - The host requests the start of an upload, or just a single record if a part number follows the <U> (inventory file only).

Scale sends:

<G> <CR> - The scale acknowledges it is at its home position and is ready to send the first record. If not at home the scale would have sent <W> <CR>, and the host would try again later.

Host sends:

<G> <CR> - The host indicates readiness for the upload. The host would send <N> to abort.

Scale sends:

<U> <X> <CR> - The scale sends the first record to the host where <X> is the data.

Host sends:

<G> <CR> - The host acknowledges record received correctly. If the host had not received the record correctly, the host would have sent <B> <CR> and the 8582 would try sending again. When the maximum number of retries by the host is done, the host aborts by sending an <N> <CR> to the 8582.

Scale sends:

<U> <X> <CR> - The scale sends the next record, starting the sequence over again.

After sending all records, the scale will send <N> <CR> to tell the host all the records have been sent. If the host sends <N> <CR> instead of <B> <CR> or <G> <CR> at any time the 8582 aborts and goes back to its home position.

6.2 Download Request

Host sends:

<D> <CR> - The host requests the start of a download sequence.

Scale sends:

<G> <CR> - The scale acknowledges it is at home position and is ready to receive the first record. If not at home position, the scale would have sent <W> <CR>, and host would try again later.

Host sends:

<D> <X> <CR> - The host sends the first record to the 8582 where <X> is the data.

Scale sends:

G <CR> - The scale acknowledges that the record was received correctly. If the 8582 had not received the record correctly, it would have sent <B> <CR> to request a resend. After the maximum number of unsuccessful resend attempts, the host sends <N> <CR> and the 8582 will abort. If the 8582 file space is full, it will send <L> <CR> and wait for the next record in case the host chooses to update an existing record.

Host sends:

<D> <X> <CR> - The host sends the next record, starting the process over again. After sending all records, the host will send <N> <CR> to tell the scale that all records have been sent. If the host sends <N> <CR> instead of data at any time, the 8582 aborts and goes back to its home position.

G. HOST COMMUNICATIONS (Multidrop Option)

1. Description

This option allows up to 28 8582's (satellites) to be connected to an IBM PC (or IBM compatible PC) for host communication. Each 8582 must have a unique address (selected in step [F8.5]) to distinguish it from the other 8582's in the network. The communication is via RS-485 using T-LAN (Toledo Local Area Network) format. Transmission speed is 375K baud at distances up to 300 meters.

The host device (master) must have an optional PCB to communicate properly with the 8582's.

2. Format

The commands and message fields are the same as those listed in the previous section for non-multidrop host interface. The command is always the first character in the information field if a command for Task 1. Therefore, the command character should be set to OH if not a command for Task 0. Task 0 and Task 1 are the only tasks. There is only one command for task 0, this being MODNAME (OFFH) which requests the model number and revision level of the scale, no information field is to be sent, the command does go into the command byte. The 8582 will send back the characters "8582" and the revision level, " for the first version, "A" for the first revision, "B" for the second revision and so on. With the exception of the print command, the 8582 sends back a positive response for all operating and file commands with no information field to indicate the command was received correctly. If the response to the print command contains no data in the information field, the scale was either displaying negative gross weight or accumulate mandatory was in process. File commands will always have the described responses (<B>, <G> ... etc.) in the information field with a OH in the response field.

The <CR> character is still used after the message. The response code is a 0 for a successful reception of a command and any other value for a failure. Failure responses only result from control characters in the information field before the <CR> or a bad command sent to Task 0. The 8582 always sends the application responses (i.e. data for the response to a file handling command) in the information field. The 8582 will attempt to start transmission for 2.5 seconds and to transmit subsequent packets for .25 seconds before timing out and announcing [BITBUS ERROR]

The packet size in the host polling table should be modified to be 32 bytes, the maximum packet size the 8582 may receive. The 8582 will not respond during keyboard entry, timeout values on the host should be set accordingly. The 8582 has a timeout value of 30 seconds, at which time an <N> is sent to the host.

The message format is:

Byte (.Bit)	Function
0 and 1	Local Link Word (for local O/S use, never transmitted across T-LAN, but is included in message length)
2	Message Length (including link word) 7-255 bytes
3	Flag Bits
.0-.3	Reserved for future use
.4	Track (TR) (for Intel use only)
.5	Destination Extension (DE)
.6	Source Extension (SE)
.7	Message Type (MT) (O=Order, I=Reply)
4	Slave Node Address (1-250) (0 and 251-255 are reserved)
5	Source and Destination Task ID's
.0-.3	Destination task ID (0-15)
.4-.7	Source task ID (0-15)
6	Command/Response code
7-254	Message Field

VIII. PREVENTIVE MAINTENANCE

The Model 8582 is designed to require a minimum of maintenance and service. This section provides instructions and procedures for maintenance of the indicator, as well as a troubleshooting guide to aid in problem analysis.

A. REQUIRED TOOLS AND SUPPLIES

The following items are recommended for proper maintenance and repairs. Common hand tools are also required.

Volt-Ohm Meter
Load Cell Simulator (Part No. 100865 00A)
Cleaning Cloth
Static Bag
Static Wrist Strap

B. MAINTENANCE SCHEDULE

The frequency at which normal maintenance (cleaning and inspection) should be performed, when installed in a clean office environment, should be twice a year. However, if the unit is subject to a dusty or a dirty environment the frequency should be increased as required.

C. CLEANING

Clean the keyboard and covers with a soft clean cloth that has been dampened with a mild window type cleaner. DO NOT USE ANY TYPE OF INDUSTRIAL SOLVENT. DO NOT SPRAY CLEANER DIRECTLY ONTO THE UNIT.

D. TROUBLESHOOTING

1. Procedure

   1.1 If operational difficulties are encountered, obtain as much information as possible regarding the particular trouble, as this may eliminate a lengthy, detailed checkout procedure.

   1.2 Check fuses, primary power lines, external circuit elements and related wiring for possible defects. Failures and malfunctions often may be traced to simple causes such as loose or improper power supply connections or fuse failure.

   1.3 Use the electrical interconnecting diagram as an aid to locating trouble causes. Part 5 of this section contains various voltage measurements that are average for normal operation. Use instrument probes carefully to avoid causing short circuits and damaging circuit components.

   1.4 Malfunctions in the 8582 are best located by substitution. A printed circuit board believed to be defective may be checked by replacing it with a known good PCB, and then observing whether the problem is corrected. WHEN HANDLING A PCB, USE A STATIC BAG FOR BOTH THE NEW AND DEFECTIVE PCB.

   1.5 To verify the problem, as being in the removed PCB, replace the defective PCB and retest. This simple test will eliminate the possibility of having replaced a good PCB because of a loose or poor connection.

   Be sure to consult the technical manual for proper programming. Do not automatically program the replacement PCB like the suspected faulty PCB as the problem may be a programming error.

   Exchange PCB's or sub-assemblies are available from your authorized Toledo Scale representative. These assemblies are repaired and tested at various Toledo Scale factories.

2. Error Messages

   Before following the suggested corrective measures in the Error Message Chart, two steps should be taken:

   - Power down/wait 15 seconds/power up.
   - Verify all voltages and harness connections.

   The suggested corrective measures assume these two steps have not resolved the error. If more than one suggestion per error is given, they are listed in the order of probability of resolving the problem.

ERROR MESSAGE CHART

Error	Description	Corrective Measures
I/O 1 ERROR	I/O 1 Communication Error	Replace Logic PCB
PRINT ERROR	Printer Communication Error	Replace Logic PCB
I/O 2 ERROR	I/O 2 Communication Error	1. If no Serial I/O 2 PCB is present, disable I/O 2 in setup. 2. If no Bar Code PCB is present, disable Bar Code in setup. 3. Check cable to Serial I/O 2 PCB 4. Replace Serial I/O 2 PCB.
BAR CODE ERROR	Bar Code Communication Error	1. If no Serial I/O 2 PCB is present, disable those selections in setup. 2. Check cable to Serial I/O 2 PCB 3. Replace Serial I/O 2 PCB.
PROM CHECKSUM ERROR	PROM Failure	Replace Logic PCB.
PROCESSOR ERROR	Internal RAM Error	Replace Logic PCB.
RAM FATAL ERROR	External RAM Error	Replace Logic PCB
NOV RAM FATAL ERROR	Shadow RAM Error	1. Replace Logic PCB
NO SCALE RESP	No response from any scale.	1. Check internal harnesses to all scales and scale PCB's. 2. Replace internal load cell or Logic PCB.
NOV RAM CHECK ERROR	Novram Checksum Error	Enter setup/Reprogram/Exit Setup.
EXTRN RAM CHK ERR	External RAM Checksum Error	Enter setup/Reprogram/Exit Setup.
RAM COLD START	RAM Checksum Error	Enter setup/Reprogram/Exit Setup.
SCL X FORMAT ERROR	Data Format Error	1. Power down/wait 15 sec./power up 2. Replace load cell or Scale PCB.
SCL X COMMON ERR	No Data Received	1. Power down/wait 15 sec./power up. 2. Check cables to scale base X. 3. Replace load cell or Scale PCB.
SCL X POS OUT ERR	Scale Overcapacity	1. Remove weight from scale platform. 2. Check load cell connections. 3. Recalibrate scale X. 4. Replace load cell or Scale PCB.
SCL X NEG OUT ERR	Scale Under Zero	1. Check load cell connections. 2. Recalibrate scale X. 3. Replace load cell or Scale PCB
SCL X DOWNLOAD ERR	No Scale Response	1. Recalibrate scale X. 2. Replace load cell or Scale PCB.
SCL X MEMORY ERROR	Digital Load Cell Memory Failure	1. Power down/wait 15 sec./power up. 2. Recalibrate scale X. 3. Replace load cell.
SCALE X OUT	No Scale Response	1. Check load cell connection. 2. Power down/wait 15 sec./power up. 3. Replace load cell or Scale PCB
XXXX RECORDS BAD	Defective Files	This indicates file checksum failure. Bad records are automatically cleared by 8582.
FILE FULL	Memory Full	Indicates maximum number of records have been entered.
ACCUM FULL	Accumulator Overflow	Indicates the piece count accumulator has exceeded 8 digits.
ACCUM UNDER	Accumulator Underflow	Indicates the accumulator has exceeded its capacity negatively.
NOT SAVED	Transaction Not Saved	Indicates the transaction buffer is full.
NOT FOUND	Record Not Found	Inventory file with entered ID not found.
APW CHK FAIL	APW Tolerance Failure	Indicates APW tolerance check has failed. Press ENTER to accept or any other key to restart count.
CHECKING MEM	Memory Check	Displayed while memory checksums are checked at power up.
LOW SAMPLE	Insufficient Sample Weight	Add additional samples.
COUNT OVER	Piece Count Over	Indicates piece count has exceeded the display capacity of 6 digits.
OVER ENH RNG	Over Enhancement Range	Indicates APW cannot be enhanced unless pieces are removed.
T-LAN ERROR	Communication Error	Multidrop host interface has a transmission error.

3. Keyboard Test

There is a short verification test accessible in the test mode of the 8582. This test verifies all the keys of both the desk and wall 8582's and also the qwerty and membrane keyboard options. To access the test:

Step 1 – Enter the setup mode and program step [F6.1] as "Y".

Step 2 – Exit the setup.

Step 3 – When the 8582 weight display shows the expanded weight from the gross scale, press the key "6".

Do not press any key other than the "6" key. If another key is pressed by accident, press the CLEAR key twice and restart the test.

Step 4 – The display should now show [KEY PRESSED] and the keyboard test has been accessed.

Step 5 – The description of any key pressed (except CLEAR) will now be shown at the left of the display.

Step 6 – After verifying the keyboard, press CLEAR to exit the test mode.

Step 7 – Enter the setup and reprogram step [F6.1] as "N".

Step 8 – Exit the setup routine.

4. Shift Test (Desk Units Only)

To verify if the 8582 is within specifications for shift variance, use the following test procedure.

4.1 Enter setup and program step [F6.1] as a "Y" for expanded weight.

4.2 Place test weights equal to one-half scale capacity on the platter at the points (A,B,C,D and E) indicated in Figure 5. Note that points A,B,D and E are one-half the distance from the center of the platter to the edge of the platter.

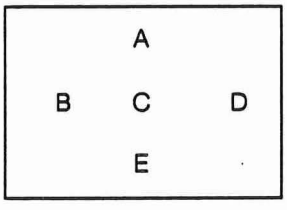


FIGURE 5

4.3 If the weight does not differ by more than 100 counts between any of the points, the 8582 is operating within specification.

4.4 If the error is greater than 100 counts, two possible causes are: 1) a mechanical bind or defect, or 2) a defective load cell.

4.5 Reprogram step [F6.1] to "N" for normal operation.

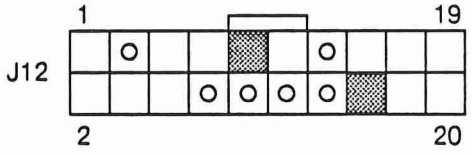
NOTE: The 100 internal counts is equivalent to two display increments.

5. Testing Power Supply Voltages

5.1 Transformer Voltages

These voltages may be checked at the plug P12 that connects to the Logic PCB at J12. Remove the harness from the PCB and measure the plug at the pins shown for verification of the transformer voltages. Note the positioning of the connector for correct pin location.

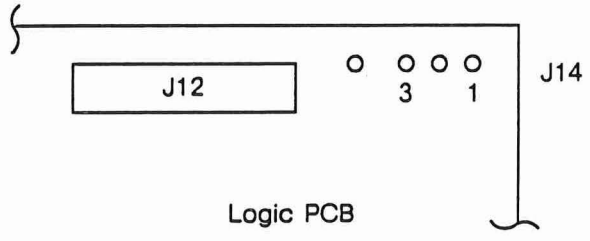
J12 Pins	Minimum Voltage	Maximum Voltage
3 to 8	8.0 VAC	10.1 VAC
8 to 13	8.0 VAC	10.1 VAC
10 to 12	43 VAC	55 VAC
12 to 14	17.5 VAC	22.7 VAC



5.2 +5 Volt Logic Supply

This voltage can be checked at the solder pads on J14 on the Logic PCB. If the voltage is out of tolerance but the AC voltage at J12 between pins 3 and 8 (from the previous check 5.1) is within tolerance, replace the Logic PCB. The second voltage listed is the raw supply to the 5 volt regulator. Chassis ground may be referenced for these measurements.

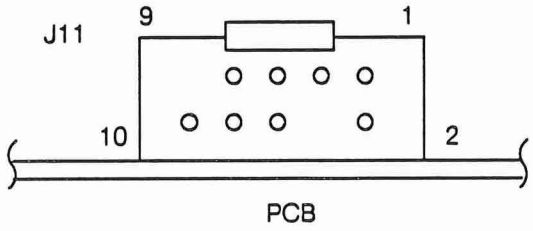
J14 Pin Number	Minimum Voltage	Maximum Voltage	Ripple Voltage
1	4.85 VDC	5.2 VDC	<50 mV
3	9.5 VDC	11 VDC	<300 mV



5.3 Digital load cell supply

This voltage is required for the digital load cell to operate. When checking this voltage, you must allow at least 30 seconds to elapse after removing AC power before removing the load cell harness from the Logic PCB. Check this voltage at J11 with respect to logic ground. If this voltage is out of specification but the raw voltage measured at J12 between pins 12 and 14 (in step 5.1) is satisfactory, replace the Logic PCB.

J11 Pin Number	Normal Voltage	Voltage Variance
2	24.9 VDC	+/- 1.5 VDC

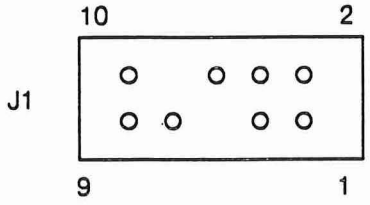


5.4 Display Voltage Check

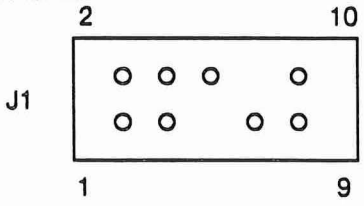
The display operates from a 60 volt supply on the Logic PCB. The raw supply for the display voltage can be checked at J12 between pins 10 and 12 as described is step 5.1 of this section. If the raw supply is satisfactory but the display voltage is out of specification, replace the Logic PCB. Chassis ground may be referenced for this check. Two check points are given – use the one that is more accessible.

Pin	Minimum Voltage	Maximum Voltage
10	58 VDC	63 VDC

Back of Display PCB at J1



Logic PCB at J9



5.5 Printer Current Loop Check

The 20mA current loop from the printer port is supplied by the raw 10 volt supply. Measure between pins 9 and 22 at the 25 pin printer output connector for this voltage. The voltage should be between 9.5 VDC and 10.5 VDC. There should also be between 18mA and 22mA DC between these same two pins. When the PRINT key is pressed, the current should fluctuate during the data transmission then return to its original reading.

E. REPLACEMENT OF LOAD CELL

CAUTION: **When replacing the load cell or any of the PCB's, remove power from the scale and wait a minimum of 30 seconds before disconnecting anything or damage may result.**

1. Remove power from the scale.
2. Remove the platter, sub-platter, dead deck (on lower capacity scales), and cover assemblies.

NOTE: On 8582-0002 utilizing the 3.75 kg load cell, reinstall the two 8-32 shipping screws through the sub-platter into the two hex standoffs. See Figure 1. Do not tighten these screws down. They are used to keep the sub-platter from twisting while tightening or loosening the two load cell screws. DAMAGE MAY RESULT IF THIS PROCEDURE IS NOT FOLLOWED. After loosening or tightening the load cell screws, the two 8-32 screws may be removed.

3. Loosen the metal cover with the foil bellows that covers the load cell. Do this by removing the four screws that secure it to the base.
4. Disconnect the load cell harness from the load cell and set the cover assembly with the foil bellows aside.
5. Remove the spacer block on top of the load cell and turn the scale on its side.
6. Remove the two hex head screws from the bottom of the scale that secure the load cell. The load cell can now be removed. Be sure to retrieve the spacer under the load cell.

7. With the scale still on its side, reinsert the two hex head screws through the base and slide the bottom spacer over the screws.
8. Carefully install the new load cell by re-screwing the screws into the bottom of the load cell, tightening them to 75 – 85 inch/pounds.
9. Stand the scale base upright and re-install the top load cell spacer.
10. Reattach the load cell harness (that is attached to the metal cover with the foil bellows) to the load cell.
11. Secure the metal cover to its original position above the load cell. Tighten the four screws that hold the cover in place.
12. Reinstall the cover and dead deck (on low capacity units).
13. Reattach the sub-platter and platter to the 8582. Reference the procedure described in the note after step 2 of this procedure for 8582-0002 units.
14. Reapply AC power and verify operation of the new load cell referencing this technical manual.

IX. GENERAL INFORMATION

A. RECOMMENDED SPARE PARTS

It is recommended that these spare parts be kept in stock in order to keep downtime to a minimum. The items are available through your local Authorized Toledo Scale Service Representative.

Part Number	Description	Qty
(*)112145 00A	Fuse 1/2A Slo-Blo	5
(*)129789 00A	Logic PCB	1
(*)131912 00A	Keyboard Assembly (Desk)	1
(*)131913 00A	Keyboard Assembly (Wall)	1
(*)129764 00A	Analog Scale PCB	?
(*)129788 00A	Digital Scale PCB	?
(*)129766 00A	Serial I/O 2 PCB	?
(*)129778 00A	Serial I/O 2-Memory PCB	?
(*)127304 00A	Bar Code PCB	?

(*) – May have letter prefix.
(?) – Quantity of 1 recommended only when using the optional kits in which these PCB's are used.

B. ACCESSORIES

The following accessories are available for use with the Model 8582.

1. Optional Kits of Parts

Option Description	Part Number	Factory Number
Scale 2 (Desk)- Analog	131311 00A	0901-0227
Scale 3 (Wall)- Analog	131312 00A	0901-0228
Scale 2 (Desk)- Digital	131313 00A	0901-0229
Scale 3 (Wall)- Digital	131314 00A	0901-0230
Qwerty Keyboard	131315 00A	0901-0231
Membrane Keyboard	131316 00A	0901-0232
Multidrop Interface	131317 00A	0901-0233
Serial I/O 2	131318 00A	0901-0234
Serial I/O 2- Memory	131319 00A	0901-0235
Bar Code Scanning	131320 00A	0901-0236
Scale 3 (Desk)- Analog	131321 00A	0901-0237
Scale 3 (Desk)-Digital	131322 00A	0901-0238

2. Printer Interconnecting Cables

Printer	Length	Part Number	Factory Number
307	6' 20'	A119714 00A A119715 00A	0900-0191 0900-0199
8804* 8806 8860*	6' 20'	A115544 00A A115545 00A	0900-0136 0900-0137
8840	6'	B128220 00A	0900-0214
8855	6' 20'	B119722 00A B119723 00A	0900-0197 0900-0198

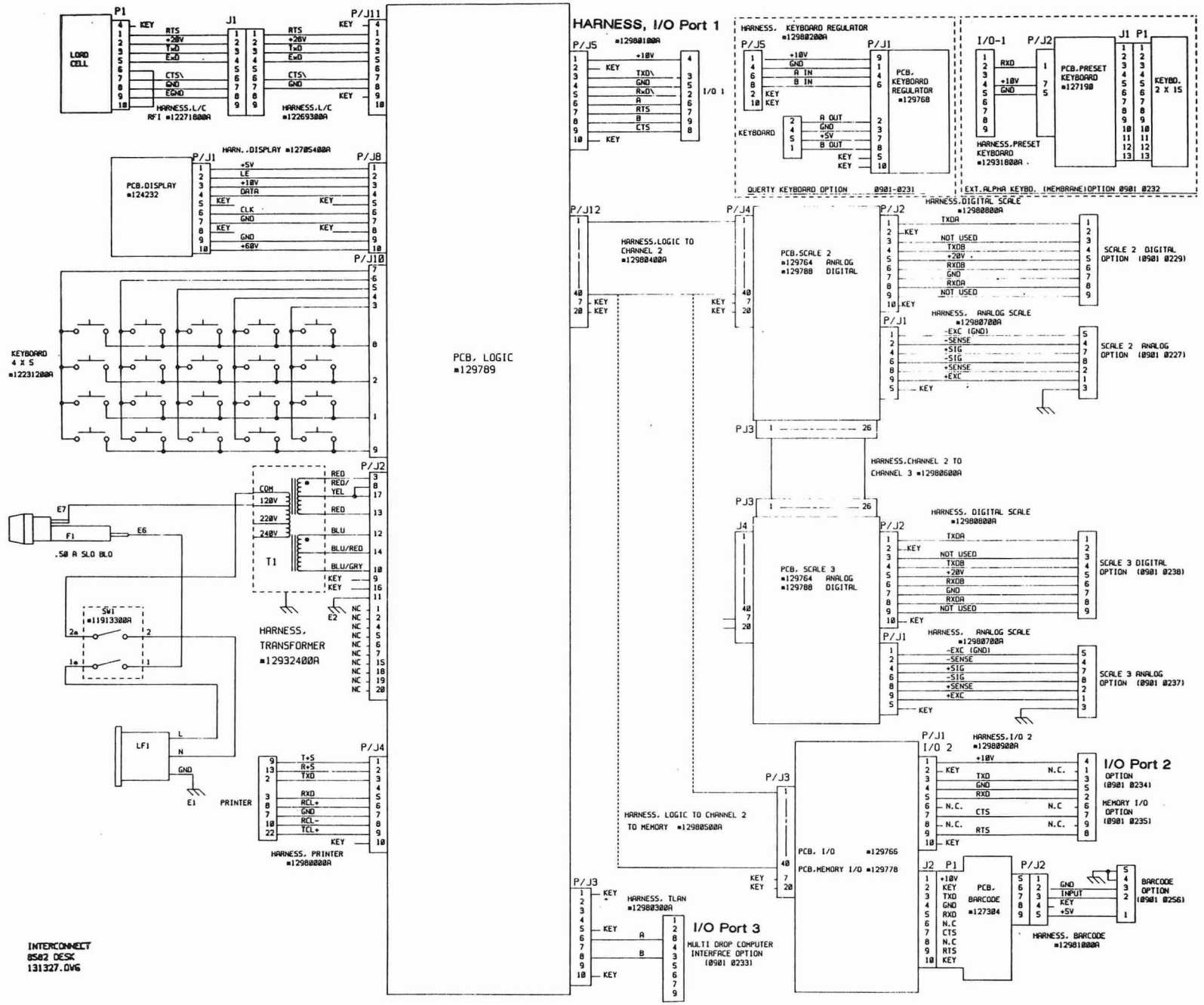
* Adaptor plug included with printer must be used.

3. Miscellaneous Cables

Part Number	Factory Number	Description
131911 00A	——	20' cable from I/O 1 or I/O 2 to 8622 Remote Display.
125974 00A	0900-6002	15' cable to load cell with 8582 connector but no load cell connector.
125985 00A	0900-6502	15' cable to load cell with 8582 connector and 6-pin load cell connector.

4. Mating Connectors

Use	Description	Part Number	Factory Number
Load cell, I/O 1 and I/O 2.	Connector Kit	125819 00A	0917-0117
Printer	Connector Kit	128881 00A	0917-0144.


HARNESS, I/O Port 1
PCB, LOGIC
=129789
LOAD CELL
HARNESS.L/C
RFI =12271800A
HARNESS.L/C
=12269300A
HARN..DISPLAY =12705400A
PCB.DISPLAY
=124232
KEYBOARD
4 X 5
=12231200A
HARNESS,
TRANSFORMER
=12932400A
.5@ A SLO BLO
SW1
=11913300A
PRINTER
HARNESS, PRINTER
=12980000A
HARNESS.LOGIC TO
CHANNEL 2
=12980400A
PCB.SCALE 2
=129764 ANALOG
=129788 DIGITAL
HARNESS.DIGITAL SCALE
=12980800A
SCALE 2 DIGITAL
OPTION (0901 0229)
HARNESS, ANALOG SCALE
=12980700A
SCALE 2 ANALOG
OPTION (0901 0227)
HARNESS.CHANNEL 2 TO
CHANNEL 3 =12980600A
PCB. SCALE 3
=129764 ANALOG
=129788 DIGITAL
SCALE 3 DIGITAL
OPTION (0901 0238)
SCALE 3 ANALOG
OPTION (0901 0237)
HARNESS. LOGIC TO CHANNEL 2
TO MEMORY =12980500A
PCB. I/O =129766
PCB.MEMORY I/O =129778
HARNESS.I/O 2
=12980900A
I/O Port 2
OPTION
(0901 0234)
MEMORY I/O
OPTION
(0901 0235)
HARNESS. TLAN
=12980300A
I/O Port 3
MULTI DROP COMPUTER
INTERFACE OPTION
(0901 0233)
PCB. BARCODE =127304
HARNESS. BARCODE
=12981000A
BARCODE
OPTION
(0901 0256)
HARNESS. KEYBOARD REGULATOR
=12980200A
PCB. KEYBOARD REGULATOR
=129768
QUERTY KEYBOARD OPTION 0901-0231
PCB.PRESET KEYBOARD
=127190
HARNESS.PRESET KEYBOARD
=12931800A
EXT.ALPHA KEYBD. (MEMBRANE)OPTION 0901 0232
KEYBD. 2 X 15
INTERCONNECT
0502 DESC
131327.DWG

7 bits no parity
1 stop bit
9600 baud
Checksum 'y'

TOLEDO SCALE

RELIANCE ELECTRIC

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